SEQUENCE LISTING

<110> Renner, Wolfgang A.
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Staufenbiel, Matthais
Frey, Peter

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<141> 2002-01-18

<150> US 60/262,379
<151> 2001-01-19

<150> US 60/288,549
<151> 2001-05-04

<150> US 60/326,998
<151> 2001-10-05

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<151> 2001-11-07

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Thr Val Ala Gln Ala
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Lys Glu Lys Leu Glu Phe Ile Leu Ala Ala His Gly Gly Cys
35 40 45

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ctgaccgaca ccctgcaggc ggaaaccgac caggtggaag acgaaaaatc cgcgctgcaa 180
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gca ctg gct ggt ttc gct acc gta gcg cag gcc tgc ggt ggt ctg acc 99
Ala Leu Ala Gly Phe Ala Thr Val Ala Gln Ala Cys Gly Gly Leu Thr
15 20 25

gac acc ctg cag gcg gaa acc gac cag gtg gaa gac gaa aaa tcc gcg 147
Asp Thr Leu Gln Ala Glu Thr Asp Gln Val Glu Asp Glu Lys Ser Ala
30 35 40

ctg caa acc gaa atc gcg aac ctg ctg aaa gaa aaa gaa aag ctg gag 195
Leu Gln Thr Glu Ile Ala Asn Leu Leu Lys Glu Lys Glu Lys Leu Glu
45 50 55

ttc atc ctg gcg gca cac ggt ggt tgc ggt ggt tct gcg gcc gct 240
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Thr Val Ala Gln Ala Cys Gly Gly Leu Thr Asp Thr Leu Gln Ala Glu
20 25 30

Thr Asp Gln Val Glu Asp Glu Lys Ser Ala Leu Gln Thr Glu Ile Ala
35 40 45

Asn Leu Leu Lys Glu Lys Glu Lys Leu Glu Phe Ile Leu Ala Ala His
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Gly Gly Cys Gly Gly Ser Ala Ala Ala
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ggt ggt ctg acc gac acc ctg cag gcg gaa acc gac cag gtg gaa gac 102
Gly Gly Leu Thr Asp Thr Leu Gln Ala Glu Thr Asp Gln Val Glu Asp
10 15 20

gaa aaa tcc gcg ctg caa acc gaa atc gcg aac ctg ctg aaa gaa aaa 150
Glu Lys Ser Ala Leu Gln Thr Glu Ile Ala Asn Leu Leu Lys Glu Lys
25 30 35

gaa aag ctg gag ttc atc ctg gcg gca cac ggt ggt tgc taagctt 196
Glu Lys Leu Glu Phe Ile Leu Ala Ala His Gly Gly Cys
40 45 50

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1 5 10 15

Glu Thr Asp Gln Val Glu Asp Glu Lys Ser Ala Leu Gln Thr Glu Ile
20 25 30

Ala Asn Leu Leu Lys Glu Lys Glu Lys Leu Glu Phe Ile Leu Ala Ala
35 40 45

His Gly Gly Cys
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gaaaaagaaa agctggagtt catcctggcg gcacacggtg gttgcggtgg ttctgcggcc 180
gctgggtgtg gggatatcaa gctt 204

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<400> 25
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1 5 10 15
Asp Gln Val Glu Asp Glu Lys Ser Ala Leu Gln Thr Glu Ile Ala Asn
20 25 30
Leu Leu Lys Glu Lys Glu Lys Leu Glu Phe Ile Leu Ala Ala His Gly
35 40 45
Gly Cys Gly Gly Ser Ala Ala Ala
50 55

<210> 26
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<400> 26
Met Ala Thr Gly Ser Arg Thr Ser Leu Leu Leu Ala Phe Gly Leu Leu
1 5 10 15

Cys Leu Pro Trp Leu Gln Glu Gly Ser Ala
20 25

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gaattcaggc ctatggctac aggctcccgg acgtccctgc tcctggcttt tggcctgctc 60
tgcctgccct ggcttcaaga gggcagcgct gggtgtgggg cggccgcttc tggtggttgc 120
ggtggtctga ccgacaccct gcaggcggaa accgaccagg tggaagacga aaaatccgcg 180
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gcacacggtg gttgctaagc tt 262

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Ala Ala Ala Ser Gly Gly Cys Gly Gly Leu Thr Asp Thr Leu Gln Ala
5 10 15

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Glu Thr Asp Gln Val Glu Asp Glu Lys Ser Ala Leu Gln Thr Glu Ile
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Ala Asn Leu Leu Lys Glu Lys Glu Lys Leu Glu Phe Ile Leu Ala Ala
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His Gly Gly Cys
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         1               5                  10

ctg ctc tgc ctg ccc tgg ctt caa gag ggc agc gct tgc ggt ggt ctg   96
Leu Leu Cys Leu Pro Trp Leu Gln Glu Gly Ser Ala Cys Gly Gly Leu
 15                  20                  25                  30

acc gac acc ctg cag gcg gaa acc gac cag gtg gaa gac gaa aaa tcc   144
Thr Asp Thr Leu Gln Ala Glu Thr Asp Gln Val Glu Asp Glu Lys Ser
                 35                  40                  45

gcg ctg caa acc gaa atc gcg aac ctg ctg aaa gaa aaa gaa aag ctg   192
Ala Leu Gln Thr Glu Ile Ala Asn Leu Leu Lys Glu Lys Glu Lys Leu
            50                  55                  60

gag ttc atc ctg gcg gca cac ggt ggt tgc ggt ggt tct gcg gcc gct   240
Glu Phe Ile Leu Ala Ala His Gly Gly Cys Gly Gly Ser Ala Ala Ala
        65                  70                  75

gggtgtggga ggcctaagct t                                          261
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Cys Leu Pro Trp Leu Gln Glu Gly Ser Ala Cys Gly Gly Leu Thr Asp
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20 25 30

Thr Leu Gln Ala Glu Thr Asp Gln Val Glu Asp Glu Lys Ser Ala Leu
35 40 45

Gln Thr Glu Ile Ala Asn Leu Leu Lys Glu Lys Glu Lys Leu Glu Phe
50 55 60

Ile Leu Ala Ala His Gly Gly Cys Gly Gly Ser Ala Ala Ala
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1 5 10 15

ggt ccg aac gaa ctc ggc cgc ttt aaa cac acc gac gca tgc tgt cgc 96
Gly Pro Asn Glu Leu Gly Arg Phe Lys His Thr Asp Ala Cys Cys Arg
20 25 30

acc cag gac atg tgt ccg gac gtc atg tct gct ggt gaa tct aaa cac 144
Thr Gln Asp Met Cys Pro Asp Val Met Ser Ala Gly Glu Ser Lys His
35 40 45

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ggg tta act aac acc gct tct cac acg cgt ctc agc tgc gac tgc gac   192
Gly Leu Thr Asn Thr Ala Ser His Thr Arg Leu Ser Cys Asp Cys Asp
     50                  55                  60

gac aaa ttc tac gac tgc ctt aag aac tcc gcc gat acc atc tct tct   240
Asp Lys Phe Tyr Asp Cys Leu Lys Asn Ser Ala Asp Thr Ile Ser Ser
 65                  70                  75                  80

tac ttc gtt ggt aaa atg tat ttc aac ctg atc gat acc aaa tgt tac   288
Tyr Phe Val Gly Lys Met Tyr Phe Asn Leu Ile Asp Thr Lys Cys Tyr
                 85                  90                  95

aaa ctg gaa cac ccg gta acc ggc tgc ggc gaa cgt acc gaa ggt cgc   336
Lys Leu Glu His Pro Val Thr Gly Cys Gly Glu Arg Thr Glu Gly Arg
            100                 105                 110

tgc ctg cac tac acc gtt gac aaa tct aaa ccg aaa gtt tac cag tgg   384
Cys Leu His Tyr Thr Val Asp Lys Ser Lys Pro Lys Val Tyr Gln Trp
        115                 120                 125

ttc gac ctg cgc aaa tac                                         402
Phe Asp Leu Arg Lys Tyr
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Gly Pro Asn Glu Leu Gly Arg Phe Lys His Thr Asp Ala Cys Cys Arg
            20                  25                  30

Thr Gln Asp Met Cys Pro Asp Val Met Ser Ala Gly Glu Ser Lys His
        35                  40                  45

Gly Leu Thr Asn Thr Ala Ser His Thr Arg Leu Ser Cys Asp Cys Asp
     50                  55                  60

Asp Lys Phe Tyr Asp Cys Leu Lys Asn Ser Ala Asp Thr Ile Ser Ser
 65                  70                  75                  80

Tyr Phe Val Gly Lys Met Tyr Phe Asn Leu Ile Asp Thr Lys Cys Tyr
                 85                  90                  95

Lys Leu Glu His Pro Val Thr Gly Cys Gly Glu Arg Thr Glu Gly Arg
            100                 105                 110

Cys Leu His Tyr Thr Val Asp Lys Ser Lys Pro Lys Val Tyr Gln Trp
        115                 120                 125

Phe Asp Leu Arg Lys Tyr
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gatgctgggc ccttaaccgc aaccaccgtg tgccgcc 37

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Ala Gln Asn Ser Glu Leu Ala Ser Thr Ala Asn Met Leu Arg Glu Gln
20 25 30

Val Ala Gln Leu Lys Gln Lys Val Met Asn His Val Gly Cys
35 40 45

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Cys Gly Gly Leu Thr Asp Thr Leu Gln Ala Glu Thr Asp Gln Val Glu
1 5 10 15

Asp Glu Lys Ser Ala Leu Gln Thr Glu Ile Ala Asn Leu Leu Lys Glu
20 25 30

Lys Glu Lys Leu Glu Phe Ile Leu Ala Ala His Gly Gly Cys
35 40 45

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<210> 63
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cgcgtcccaa gcttttagca accaacgtgg ttcatgac 38

<210> 77
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<400> 77
ccggaattca tggccacact tttaaggagc 30

<210> 78
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 78
cgcgtcccaa gcttttagca accaacgtgg ttcatgac 38

<210> 79

<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 79
ccggaattca tggacattga cccttataaa g 31

<210> 80
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 80
cctagagcca cctttgccac catcttctaa attagtaccc acccaggtag c 51

<210> 81
<211> 48
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 81
gaagatggtg gcaaaggtgg ctctagggac ctagtagtca gttatgtc 48

<210> 82
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 82
cgcgtcccaa gcttctaaac aacagtagtc tccggaag 38

<210> 83
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 83
gccgaattcc tagcagctag caccgaattt atctaa 36

<210> 84
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 84
ggttaagtcg acatgagagt gaaggagaaa tat 33

<210> 85
<211> 30
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 85
taaccgaatt caggaggtaa aaagatatgg 30

<210> 86
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 86
gaagtaaagc ttttaaccac cgcaaccacc agaag 35

<210> 87
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer

<400> 87
tcgaatgggc cctcatcttc gtgtgctagt cag 33

<210> 88
<211> 4
<212> PRT
<213> Artificial Sequence

<220>
<223> Fos fusion construct

<400> 88
Glu Phe Arg Arg
1

<210> 89
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 89
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Ile
65 70 75 80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110

Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145 150 155 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
165 170 175

Gln Ser Arg Gly Ser Gln Cys
180

<210> 90
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 90
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu

```
     50                  55                  60

Leu Met Thr Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Thr
 65                  70                  75                  80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
                 85                  90                  95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
            100                 105                 110

Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
        115                 120                 125

Pro Pro Ala Tyr Arg Pro Thr Asn Ala Pro Ile Leu Ser Thr Leu Pro
    130                 135                 140

Glu Thr Cys Val Ile Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145                 150                 155                 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
                165                 170                 175

Gln Ser Arg Gly Ser Gln Cys
            180


<210> 91
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 91
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
 1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
            20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
        35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
    50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
                85                  90                  95

Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Ile Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
```

```
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210
```

<210> 92
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 92

```
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Asn Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
                85                  90                  95

Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Ile Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
```

210

<210> 93
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 93
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15

Ser Phe Leu Pro Thr Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
65 70 75 80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110

Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu Thr Cys Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145 150 155 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
165 170 175

Gln Ser Arg Glu Ser Gln Cys
180

<210> 94
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 94
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45

```
Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp Leu Met Thr
                 85                  90                  95

Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Val Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Val Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210
```

<210> 95
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 95

```
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Asp Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp Leu Met Thr
                 85                  90                  95

Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Val Ser Arg Asp
            100                 105                 110
```

```
Leu Val Val Ser Tyr Val Asn Thr Asn Val Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210
```

<210> 96
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 96

```
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro Gln
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
                 85                  90                  95

Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Ile Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175
```

```
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210


<210> 97
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 97
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
                 85                  90                  95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Lys Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Gly Ser Gln Cys
    210


<210> 98
<211> 183
```

<212> PRT
<213> Hepatitis B virus

<400> 98
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

Thr Ala Ser Ala Leu Phe Arg Asp Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Ala
65 70 75 80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110

Asp Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Pro Ala Tyr Arg Pro Ser Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu Thr Cys Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145 150 155 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
165 170 175

Gln Ser Arg Glu Ser Gln Cys
180

<210> 99
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 99
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
65 70 75 80

```
Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
                 85                  90                  95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
            100                 105                 110

Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
        115                 120                 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
    130                 135                 140

Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145                 150                 155                 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
                165                 170                 175

Gln Ser Arg Glu Ser Gln Cys
            180


<210> 100
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 100
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg His Ala Ile Leu Cys Trp Gly Asp Leu Arg Thr
                 85                  90                  95

Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Ile Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175
```

```
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210


<210> 101
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 101
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Asp Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
     50                  55                  60

Ala Leu Phe Arg Asp Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
                 85                  90                  95

Leu Ala Thr Trp Val Gly Ala Asn Leu Glu Asp Pro Ala Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Gln Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Cys
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210


<210> 102
```

<211> 183
<212> PRT
<213> Artificial Sequence

<220>
<223> synthetic human Hepatitus B construct

<400> 102
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
65 70 75 80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110

Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145 150 155 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
165 170 175

Gln Ser Arg Glu Ser Gln Cys
180

<210> 103
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 103
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser

```
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp Leu Met Ser
                 85                  90                  95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ile Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210
```

<210> 104
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 104

```
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
  1               5                  10                  15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
             20                  25                  30

Thr Ala Ser Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys
         35                  40                  45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
     50                  55                  60

Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
 65                  70                  75                  80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
                 85                  90                  95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
            100                 105                 110

Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
```

```
        115                 120                 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
    130                 135                 140

Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145                 150                 155                 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
                165                 170                 175

Gln Ser Arg Glu Ser Gln Cys
            180


<210> 105
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 105
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
  1               5                  10                  15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
            20                  25                  30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
         35                  40                  45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp
     50                  55                  60

Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
 65                  70                  75                  80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
                85                  90                  95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
            100                 105                 110

Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
        115                 120                 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
    130                 135                 140

Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145                 150                 155                 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
                165                 170                 175

Gln Ser Arg Glu Ser Gln Cys
            180


<210> 106
<211> 183
<212> PRT
```

<213> Hepatitis B virus

<400> 106

```
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
  1               5                  10                  15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
             20                  25                  30

Thr Ala Ser Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys
          35                  40                  45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
      50                  55                  60

Leu Met Thr Leu Ala Thr Trp Val Gly Ala Asn Leu Glu Asp Pro Ala
 65                  70                  75                  80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
                 85                  90                  95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
            100                 105                 110

Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
        115                 120                 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
    130                 135                 140

Glu Thr Thr Val Val Arg Arg Arg Gly Arg Thr Pro Arg Arg Arg Thr
145                 150                 155                 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
                165                 170                 175

Gln Ser Arg Glu Ser Gln Cys
            180
```

<210> 107
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 107

```
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
          35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
      50                  55                  60

Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80
```

```
His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
                 85                  90                  95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210
```

<210> 108
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 108

```
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1                 5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp Leu Met Thr
                 85                  90                  95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140
```

```
Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210
```

<210> 109
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 109

```
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Thr Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
                85                  90                  95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ala Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205
```

```
Glu Ser Gln Cys
    210


<210> 110
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 110
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Phe Glu Cys Ser Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
                 85                  90                  95
Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Ile Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210


<210> 111
<211> 212
<212> PRT
<213> Hepatitis B virus


<220>
<221> UNSURE
<222> 28
```

<223> Xaa may be any amino acid.

<400> 111

```
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Xaa Asp Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp Leu Ile Thr
                 85                  90                  95

Leu Ser Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Thr Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Thr Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210
```

<210> 112
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 112

```
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
 1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45
```

```
Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Asn Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
                 85                  90                  95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210
```

<210> 113
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 113

```
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
                 85                  90                  95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
            100                 105                 110
```

```
Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Cys Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210
```

<210> 114
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 114

```
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
            20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
        35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
    50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
                85                  90                  95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175
```

```
Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Pro Gln Cys
    210


<210> 115
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 115
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Ser Thr Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
                 85                  90                  95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
            100                 105                 110


Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210
```

<210> 116
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 116
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
50 55 60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65 70 75 80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
85 90 95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
100 105 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
115 120 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145 150 155 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Leu Thr Leu Pro Glu Thr Thr
165 170 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
180 185 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
195 200 205

Glu Ser Gln Cys
210

<210> 117
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 117
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30

```
Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp Leu Met Thr
                 85                  90                  95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Lys Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210
```

<210> 118
<211> 212
<212> PRT
<213> Hepatitis B virus

```
<400> 118
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ala
     50                  55                  60

Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
                 85                  90                  95
```

```
Leu Ala Thr Trp Val Gly Thr Asn Leu Glu Asp Pro Ala Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210
```

<210> 119
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 119

```
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Ser Met Glu Leu Leu
  1               5                  10                  15

Ser Phe Leu Pro Ser Asp Phe Tyr Pro Ser Val Arg Asp Leu Leu Asp
             20                  25                  30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
         35                  40                  45

Thr Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
     50                  55                  60

Leu Met Thr Leu Ala Thr Trp Val Gly Gly Asn Leu Gln Asp Pro Thr
 65                  70                  75                  80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
                 85                  90                  95

Phe Arg Gln Leu Leu Trp Phe His Val Ser Cys Leu Thr Phe Gly Arg
            100                 105                 110

Glu Thr Val Val Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
        115                 120                 125

Pro Gln Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
    130                 135                 140

Glu Thr Cys Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145                 150                 155                 160
```

```
Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
                165                 170                 175

Gln Ser Arg Glu Ser Gln Cys
            180


<210> 120
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 120
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
  1               5                  10                  15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
            20                  25                  30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
        35                  40                  45

Ser Pro His His Thr Ala Leu Arg His Val Phe Leu Cys Trp Gly Asp
    50                  55                  60

Leu Met Thr Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Thr
65                  70                  75                  80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
                85                  90                  95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
            100                 105                 110

Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
        115                 120                 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
    130                 135                 140

Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145                 150                 155                 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
                165                 170                 175

Gln Ser Arg Glu Ser Gln Cys
            180


<210> 121
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 121
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
            20                  25                  30
```

```
Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp Leu Thr Thr
                 85                  90                  95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210


<210> 122
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 122
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
                 85                  90                  95
```

```
Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Ile Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210
```

<210> 123
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 123

```
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
  1               5                  10                  15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
             20                  25                  30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
         35                  40                  45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp
     50                  55                  60

Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Val
 65                  70                  75                  80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Val Gly Leu Lys
                85                  90                  95

 Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
            100                 105                 110

Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
        115                 120                 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
    130                 135                 140

Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145                 150                 155                 160
```

```
Pro Ser Pro Ala Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
                165                 170                 175

Gln Ser Arg Glu Ser Gln Cys
            180


<210> 124
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 124
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
            20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
        35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
    50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp Leu Met Asn
                85                  90                  95

Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Val Ser Arg Asp
            100                 105                 110

Leu Val Val Gly Tyr Val Asn Thr Thr Val Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210


<210> 125
<211> 183
<212> PRT
<213> Hepatitis B virus
```

<400> 125
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
1 5 10 15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
20 25 30

Thr Ala Ser Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys
35 40 45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp
50 55 60

Leu Met Thr Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala
65 70 75 80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
85 90 95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
100 105 110

Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
115 120 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
130 135 140

Glu Thr Thr Val Val Arg Arg Arg Gly Arg Thr Pro Arg Arg Arg Thr
145 150 155 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
165 170 175

Gln Ser Arg Glu Ser Gln Cys
180

<210> 126
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 126
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45

Pro Ser Asp Phe Phe Pro Ser Val Arg Ala Leu Leu Asp Thr Ala Ser
50 55 60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65 70 75 80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr

```
                85                  90                  95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Ile Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210


<210> 127
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 127
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp Leu Met Thr
                85                  90                  95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Thr Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Val Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
```

```
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210


<210> 128
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 128
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
  1               5                  10                  15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
             20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
         35                  40                  45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
     50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
 65                  70                  75                  80

His Thr Ala Leu Arg Gln Arg Ile Leu Cys Trp Gly Glu Leu Met Thr
                85                  90                  95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Thr Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
```

210

<210> 129
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 129
Met Gln Leu Phe His Leu Cys Leu Val Ile Ser Cys Ser Cys Pro Thr
1 5 10 15

Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
20 25 30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
35 40 45

Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ala
50 55 60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65 70 75 80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr
85 90 95

Leu Ala Thr Trp Val Gly Asn Asn Leu Glu Asp Pro Ala Ser Arg Asp
100 105 110

Leu Val Val Asn Tyr Val Asn Thr Asn Met Gly Leu Lys Ile Arg Gln
115 120 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
130 135 140

Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145 150 155 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
165 170 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
180 185 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
195 200 205

Glu Ser Gln Cys
210

<210> 130
<211> 212
<212> PRT
<213> Hepatitis B virus

<400> 130
Met Gln Leu Phe His Leu Cys Leu Ile Ile Ser Cys Ser Cys Pro Thr
1 5 10 15

```
Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Gly Met Asp Ile
            20                  25                  30

Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu
        35                  40                  45

Pro Ser Ala Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser
    50                  55                  60

Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His
65                  70                  75                  80

His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp Leu Met Thr
                85                  90                  95

Leu Ala Thr Trp Val Gly Val Asn Leu Glu Asp Pro Ala Ser Arg Asp
            100                 105                 110

Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys Phe Arg Gln
        115                 120                 125

Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val
    130                 135                 140

Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr
                165                 170                 175

Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
            180                 185                 190

Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
        195                 200                 205

Glu Ser Gln Cys
    210
```

<210> 131
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 131

```
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
  1                 5                  10                  15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
            20                  25                  30

Thr Ala Ala Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
        35                  40                  45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
    50                  55                  60

Leu Met Thr Leu Ala Thr Trp Val Gly Asn Asn Leu Glu Asp Pro Ala
65                  70                  75                  80
```

```
Ser Arg Asp Leu Val Val Asn Tyr Val Asn Thr Asn Met Gly Leu Lys
                 85                  90                  95

Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
            100                 105                 110

Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
        115                 120                 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
    130                 135                 140

Glu Thr Thr Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145                 150                 155                 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
                165                 170                 175

Gln Ser Arg Glu Ser Gln Cys
            180


<210> 132
<211> 183
<212> PRT
<213> Hepatitis B virus

<400> 132
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
  1               5                  10                  15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
             20                  25                  30

Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
         35                  40                  45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
     50                  55                  60

Leu Met Thr Leu Ala Thr Trp Val Gly Gly Asn Leu Glu Asp Pro Ile
 65                  70                  75                  80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Met Gly Leu Lys
                 85                  90                  95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
            100                 105                 110

Glu Thr Val Ile Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
        115                 120                 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
    130                 135                 140

Glu Thr Cys Val Val Arg Arg Arg Gly Arg Ser Pro Arg Arg Arg Thr
145                 150                 155                 160

Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser
                165                 170                 175
```

Gln Ser Arg Gly Ser Gln Cys
180

<210> 133
<211> 3221
<212> DNA
<213> Hepatitis B virus

<220>
<221> CDS
<222> (1901)..(2458)

<400> 133
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tggtggctcc agttcaggaa cagtaaaccc tgctccgaat attgcctctc acatctcgtc 120

aatctccgcg aggactgggg accctgtgac gaacatggag aacatcacat caggattcct 180

aggacccctg ctcgtgttac aggcggggtt tttattgttg acaagaatcc tcacaatacc 240

gcagagtcta gactcgtggt ggacttctct caattttata gggggatcac ccgtgtgtct 300

tggccaaaat tcgcagtccc caacctccaa tcactcacca acctcctgtc ctccaatttg 360

tcctggttat cgctggatgt gtctgcggcg ttttatcata ttcctcttca tcctgctgct 420

atgcctcatc ttcttattgg ttcttctgga ttatcaaggt atgttgcccg tttgtcctct 480

aattccagga tcaacaacaa ccagtacggg accatgcaaa acctgcacga ctcctgctca 540

aggcaactct atgtttccct catgttgctg tacaaaacct acggttggaa attgcacctg 600

tattcccatc ccatcgtcct gggctttcgc aaaataccta tgggagtggg cctcagtccg 660

tttctcttgg ctcagtttac tagtgccatt tgttcagtgg ttcgtagggc tttcccccac 720

tgtttggctt tcagctatat ggatgatgtg gtattggggg ccaagtctgt acagcatcgt 780

gagtcccttt ataccgctgt taccaatttt cttttgtctc tgggtataca tttaaaccct 840

aacaaaacaa aaagatgggg ttattcccta aacttcatgg gttacataat tggaagttgg 900

ggaacattgc cacaggatca tattgtacaa aagatcaaac actgttttag aaaacttcct 960

gttaacaggc ctattgattg gaaagtatgt caaagaattg tgggtctttt gggctttgct 1020

gctccattta cacaatgtgg atatcctgcc ttaatgcctt tgtatgcatg tatacaggct 1080

aaacaggctt tcactttctc gccaacttac aaggcctttc taagtaaaca gtacatgaac 1140

ctttaccccg ttgctcggca acggcctggt ctgtgccaag tgtttgctga cgcaaccccc 1200

actggttggg gcttggccat aggccatcag cgcatgagtg gaacctttgt ggctcctctg 1260

ccgatccata ctgcggaact cctagccgct tgtattgctc gcagccggtc tggagcaaag 1320

ctcatcggaa ctgacaattc tgtcgtcctc tcgcggaaat atacatcgtt tccatggctg 1380

ctaggctgta ctgccaactg gatccttcgc gggacgtcct ttgtttacgt cccgtcggcg 1440

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ctgaatcccg cggacgaccc ctctcggggc cgcttgggac tctatcgtcc ccttctccgt 1500

ctgccgttcc agccgaccac ggggcgcacc tctctttacg cggtctcccc gtctgtgcct 1560

tctcatctgc cggtccgtgt gcacttcgct tcacctctgc acgttgcatg gagaccaccg 1620

tgaacgccca tcagatcctg cccaaggtct tacataagag gactcttgga ctcccagcaa 1680

tgtcaacgac cgaccttgag gcctacttca aagactgtgt gtttaaggac tgggaggagc 1740

tgggggagga gattaggtta aaggtctttg tattaggagg ctgtaggcat aaattggtct 1800

gcgcaccagc accatgcaac tttttcacct ctgcctaatc atctcttgta catgtcccac 1860

tgttcaagcc tccaagctgt gccttgggtg gctttggggc atg gac att gac cct   1915
                                            Met Asp Ile Asp Pro
                                              1               5

tat aaa gaa ttt gga gct act gtg gag tta ctc tcg ttt ttg cct tct   1963
Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu Ser Phe Leu Pro Ser
                 10                  15                  20

gac ttc ttt cct tcc gtc aga gat ctc cta gac acc gcc tca gct ctg   2011
Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp Thr Ala Ser Ala Leu
             25                  30                  35

tat cga gaa gcc tta gag tct cct gag cat tgc tca cct cac cat act   2059
Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys Ser Pro His His Thr
         40                  45                  50

gca ctc agg caa gcc att ctc tgc tgg ggg gaa ttg atg act cta gct   2107
Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu Leu Met Thr Leu Ala
     55                  60                  65

acc tgg gtg ggt aat aat ttg gaa gat cca gca tcc agg gat cta gta   2155
Thr Trp Val Gly Asn Asn Leu Glu Asp Pro Ala Ser Arg Asp Leu Val
 70                  75                  80                  85

gtc aat tat gtt aat act aac atg ggt tta aag atc agg caa cta ttg   2203
Val Asn Tyr Val Asn Thr Asn Met Gly Leu Lys Ile Arg Gln Leu Leu
                 90                  95                 100

tgg ttt cat ata tct tgc ctt act ttt gga aga gag act gta ctt gaa   2251
 Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg Glu Thr Val Leu Glu
             105                 110                 115

tat ttg gtc tct ttc gga gtg tgg att cgc act cct cca gcc tat aga   2299
Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Pro Ala Tyr Arg
         120                 125                 130

cca cca aat gcc cct atc tta tca aca ctt ccg gaa act act gtt gtt   2347
Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu Thr Thr Val Val
     135                 140                 145

aga cga cgg gac cga ggc agg tcc cct aga aga aga act ccc tcg cct   2395
Arg Arg Arg Asp Arg Gly Arg Ser Pro Arg Arg Arg Thr Pro Ser Pro
150                 155                 160                 165

cgc aga cgc aga tct caa tcg ccg cgt cgc aga aga tct caa tct cgg   2443
Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg Arg Ser Gln Ser Arg
```

```
                170                 175                 180

gaa tct caa tgt tag tattccttgg actcataagg tgggaaactt tactgggctt   2498
Glu Ser Gln Cys
            185

tattcctcta cagtacctat ctttaatcct gaatggcaaa ctccttcctt tcctaagatt 2558

catttacaag aggacattat tgataggtgt caacaatttg tgggccctct cactgtaaat 2618

gaaaagagaa gattgaaatt aattatgcct gctagattct atcctaccca cactaaatat 2678

ttgcccttag acaaaggaat taaaccttat tatccagatc aggtagttaa tcattacttc 2738

caaaccagac attatttaca tactctttgg aaggctggta ttctatataa gagggaaacc 2798

acacgtagcg catcattttg cgggtcacca tattcttggg aacaagagct acagcatggg 2858

aggttggtca ttaaaacctc gcaaaggcat ggggacgaat ctttctgttc ccaaccctct 2918

gggattcttt cccgatcatc agttggaccc tgcattcgga gccaactcaa acaatccaga 2978

ttgggacttc aaccccatca aggaccactg gccagcagcc aaccaggtag gagtgggagc 3038

attcgggcca gggctcaccc ctccacacgg cggtattttg gggtggagcc ctcaggctca 3098

gggcatattg accacagtgt caacaattcc tcctcctgcc tccaccaatc ggcagtcagg 3158

aaggcagcct actcccatct ctccacctct aagagacagt catcctcagg ccatgcagtg 3218

gaa                                                               3221
```

<210> 134
<211> 185
<212> PRT
<213> Hepatitis B virus

<400> 134

```
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
  1               5                  10                  15
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
             20                  25                  30
Thr Ala Ser Ala Leu Tyr Arg Glu Ala Leu Glu Ser Pro Glu His Cys
         35                  40                  45
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Glu
     50                  55                  60
Leu Met Thr Leu Ala Thr Trp Val Gly Asn Asn Leu Glu Asp Pro Ala
 65                  70                  75                  80
Ser Arg Asp Leu Val Val Asn Tyr Val Asn Thr Asn Met Gly Leu Lys
                 85                  90                  95
Ile Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
            100                 105                 110
Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
        115                 120                 125
Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
    130                 135                 140
Glu Thr Thr Val Val Arg Arg Arg Asp Arg Gly Arg Ser Pro Arg Arg
145                 150                 155                 160
Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg
                165                 170                 175
```

```
Arg Ser Gln Ser Arg Glu Ser Gln Cys
            180                 185



<210> 135
<211> 188
<212> PRT
<213> Woodchuck hepatitis B virus

<400> 135
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ser Ser Tyr Gln Leu Leu
  1               5                  10                  15

Asn Phe Leu Pro Leu Asp Phe Phe Pro Asp Leu Asn Ala Leu Val Asp
             20                  25                  30

Thr Ala Thr Ala Leu Tyr Glu Glu Glu Leu Thr Gly Arg Glu His Cys
         35                  40                  45

Ser Pro His His Thr Ala Ile Arg Gln Ala Leu Val Cys Trp Asp Glu
     50                  55                  60

Leu Thr Lys Leu Ile Ala Trp Met Ser Ser Asn Ile Thr Ser Glu Gln
 65                  70                  75                  80

Val Arg Thr Ile Ile Val Asn His Val Asn Asp Thr Trp Gly Leu Lys
                 85                  90                  95

Val Arg Gln Ser Leu Trp Phe His Leu Ser Cys Leu Thr Phe Gly Gln
            100                 105                 110

His Thr Val Gln Glu Phe Leu Val Ser Phe Gly Val Trp Ile Arg Thr
        115                 120                 125

Pro Ala Pro Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
    130                 135                 140

Glu His Thr Val Ile Arg Arg Arg Gly Gly Ala Arg Ala Ser Arg Ser
145                 150                 155                 160

Pro Arg Arg Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro
                165                 170                 175

Arg Arg Arg Arg Ser Gln Ser Pro Ser Thr Asn Cys
            180                 185



<210> 136
<211> 217
<212> PRT
<213> Ground squirrel hepatitis virus

<400> 136
Met Tyr Leu Phe His Leu Cys Leu Val Phe Ala Cys Val Pro Cys Pro
  1               5                  10                  15

Thr Val Gln Ala Ser Lys Leu Cys Leu Gly Trp Leu Trp Asp Met Asp
             20                  25                  30

Ile Asp Pro Tyr Lys Glu Phe Gly Ser Ser Tyr Gln Leu Leu Asn Phe
```

```
         35                  40                  45

Leu Pro Leu Asp Phe Phe Pro Asp Leu Asn Ala Leu Val Asp Thr Ala
     50                  55                  60

Ala Ala Leu Tyr Glu Glu Glu Leu Thr Gly Arg Glu His Cys Ser Pro
 65                  70                  75                  80

His His Thr Ala Ile Arg Gln Ala Leu Val Cys Trp Glu Glu Leu Thr
                 85                  90                  95

Arg Leu Ile Thr Trp Met Ser Glu Asn Thr Thr Glu Glu Val Arg Arg
            100                 105                 110

Ile Ile Val Asp His Val Asn Asn Thr Trp Gly Leu Lys Val Arg Gln
        115                 120                 125

Thr Leu Trp Phe His Leu Ser Cys Leu Thr Phe Gly Gln His Thr Val
    130                 135                 140

Gln Glu Phe Leu Val Ser Phe Gly Val Trp Ile Arg Thr Pro Ala Pro
145                 150                 155                 160

Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro Glu His Thr
                165                 170                 175

Val Ile Arg Arg Arg Gly Gly Ser Arg Ala Ala Arg Ser Pro Arg Arg
            180                 185                 190

Arg Thr Pro Ser Pro Arg Arg Arg Arg Ser Gln Ser Pro Arg Arg Arg
        195                 200                 205

Arg Ser Gln Ser Pro Ala Ser Asn Cys
    210                 215
```

<210> 137
<211> 262
<212> PRT
<213> Snow Goose Hepatitis B Virus

```
<400> 137
Met Asp Val Asn Ala Ser Arg Ala Leu Ala Asn Val Tyr Asp Leu Pro
  1               5                  10                  15

Asp Asp Phe Phe Pro Lys Ile Glu Asp Leu Val Arg Asp Ala Lys Asp
            20                  25                  30

Ala Leu Glu Pro Tyr Trp Lys Ser Asp Ser Ile Lys Lys His Val Leu
        35                  40                  45

Ile Ala Thr His Phe Val Asp Leu Ile Glu Asp Phe Trp Gln Thr Thr
    50                  55                  60

Gln Gly Met His Glu Ile Ala Glu Ala Ile Arg Ala Val Ile Pro Pro
 65                  70                  75                  80

Thr Thr Ala Pro Val Pro Ser Gly Tyr Leu Ile Gln His Asp Glu Ala
                85                  90                  95

Glu Glu Ile Pro Leu Gly Asp Leu Phe Lys Glu Gln Glu Glu Arg Ile
```

```
            100                 105                 110

Val Ser Phe Gln Pro Asp Tyr Pro Ile Thr Ala Arg Ile His Ala His
        115                 120                 125

Leu Lys Ala Tyr Ala Lys Ile Asn Glu Glu Ser Leu Asp Arg Ala Arg
    130                 135                 140

Arg Leu Leu Trp Trp His Tyr Asn Cys Leu Leu Trp Gly Glu Ala Thr
145                 150                 155                 160

Val Thr Asn Tyr Ile Ser Arg Leu Arg Thr Trp Leu Ser Thr Pro Glu
                165                 170                 175

Lys Tyr Arg Gly Arg Asp Ala Pro Thr Ile Glu Ala Ile Thr Arg Pro
            180                 185                 190

Ile Gln Val Ala Gln Gly Gly Arg Lys Thr Ser Thr Ala Thr Arg Lys
        195                 200                 205

Pro Arg Gly Leu Glu Pro Arg Arg Arg Lys Val Lys Thr Thr Val Val
    210                 215                 220

Tyr Gly Arg Arg Arg Ser Lys Ser Arg Glu Arg Arg Ala Ser Ser Pro
225                 230                 235                 240

Gln Arg Ala Gly Ser Pro Leu Pro Arg Ser Ser Ser Ser His His Arg
                245                 250                 255

Ser Pro Ser Pro Arg Lys
            260
```

<210> 138
<211> 305
<212> PRT
<213> Duck hepatitis B virus

<400> 138

```
Met Trp Asp Leu Arg Leu His Pro Ser Pro Phe Gly Ala Ala Cys Gln
  1               5                  10                  15

Gly Ile Phe Thr Ser Ser Leu Leu Leu Phe Leu Val Thr Val Pro Leu
             20                  25                  30

Val Cys Thr Ile Val Tyr Asp Ser Cys Leu Cys Met Asp Ile Asn Ala
         35                  40                  45

Ser Arg Ala Leu Ala Asn Val Tyr Asp Leu Pro Asp Asp Phe Phe Pro
     50                  55                  60

Lys Ile Asp Asp Leu Val Arg Asp Ala Lys Asp Ala Leu Glu Pro Tyr
 65                  70                  75                  80

Trp Arg Asn Asp Ser Ile Lys Lys His Val Leu Ile Ala Thr His Phe
                 85                  90                  95

Val Asp Leu Ile Glu Asp Phe Trp Gln Thr Thr Gln Gly Met His Glu
            100                 105                 110

Ile Ala Glu Ala Leu Arg Ala Ile Ile Pro Ala Thr Thr Ala Pro Val
```

```
        115                 120                 125

Pro Gln Gly Phe Leu Val Gln His Glu Glu Ala Glu Glu Ile Pro Leu
    130                 135                 140

Gly Glu Leu Phe Arg Tyr Gln Glu Glu Arg Leu Thr Asn Phe Gln Pro
145                 150                 155                 160

Asp Tyr Pro Val Thr Ala Arg Ile His Ala His Leu Lys Ala Tyr Ala
                165                 170                 175

Lys Ile Asn Glu Glu Ser Leu Asp Arg Ala Arg Arg Leu Leu Trp Trp
            180                 185                 190

His Tyr Asn Cys Leu Leu Trp Gly Glu Pro Asn Val Thr Asn Tyr Ile
        195                 200                 205

Ser Arg Leu Arg Thr Trp Leu Ser Thr Pro Glu Lys Tyr Arg Gly Lys
    210                 215                 220

Asp Ala Pro Thr Ile Glu Ala Ile Thr Arg Pro Ile Gln Val Ala Gln
225                 230                 235                 240

Gly Gly Arg Asn Lys Thr Gln Gly Val Arg Lys Ser Arg Gly Leu Glu
                245                 250                 255


Pro Arg Arg Arg Arg Val Lys Thr Thr Ile Val Tyr Gly Arg Arg Arg
            260                 265                 270

Ser Lys Ser Arg Glu Arg Arg Ala Pro Thr Pro Gln Arg Ala Gly Ser
        275                 280                 285

Pro Leu Pro Arg Thr Ser Arg Asp His His Arg Ser Pro Ser Pro Arg
    290                 295                 300

Glu
305

<210> 139
<211> 212
<212> PRT
<213> Haemophilus influenzae

<400> 139
Met Lys Lys Thr Leu Leu Gly Ser Leu Ile Leu Leu Ala Phe Ala Gly
 1               5                  10                  15

Asn Val Gln Ala Ala Ala Asn Ala Asp Thr Ser Gly Thr Val Thr Phe
            20                  25                  30

Phe Gly Lys Val Val Glu Asn Thr Cys Gln Val Asn Gln Asp Ser Glu
        35                  40                  45

Tyr Glu Cys Asn Leu Asn Asp Val Gly Lys Asn His Leu Ser Gln Gln
    50                  55                  60

Gly Tyr Thr Ala Met Gln Thr Pro Phe Thr Ile Thr Leu Glu Asn Cys
65                  70                  75                  80

Asn Val Thr Thr Thr Asn Asn Lys Pro Lys Ala Thr Lys Val Gly Val
```

```
                85                  90                  95

Tyr Phe Tyr Ser Trp Glu Ile Ala Asp Lys Asp Asn Lys Tyr Thr Leu
            100                 105                 110

Lys Asn Ile Lys Glu Asn Thr Gly Thr Asn Asp Ser Ala Asn Lys Val
        115                 120                 125

Asn Ile Gln Leu Leu Glu Asp Asn Gly Thr Ala Glu Ile Lys Val Val
    130                 135                 140

Gly Lys Thr Thr Thr Asp Phe Thr Ser Glu Asn His Asn Gly Ala Gly
145                 150                 155                 160

Ala Asp Pro Val Ala Thr Asn Lys His Ile Ser Ser Leu Thr Pro Leu
                165                 170                 175

Asn Asn Gln Asn Ser Ile Asn Leu His Tyr Ile Ala Gln Tyr Tyr Ala
            180                 185                 190

Thr Gly Val Ala Glu Ala Gly Lys Val Pro Ser Ser Val Asn Ser Gln
        195                 200                 205

Ile Ala Tyr Glu
    210
```

<210> 140
<211> 139
<212> PRT
<213> Pseudomonas stutzeri

```
<400> 140
Met Lys Ala Gln Met Gln Lys Gly Phe Thr Leu Ile Glu Leu Met Ile
  1               5                  10                  15

Val Val Ala Ile Ile Gly Ile Leu Ala Ala Ile Ala Leu Pro Ala Tyr
             20                  25                  30

Gln Asp Tyr Thr Val Arg Ser Asn Ala Ala Ala Ala Leu Ala Glu Ile
         35                  40                  45

Thr Pro Gly Lys Ile Gly Phe Glu Gln Ala Ile Asn Glu Gly Lys Thr
     50                  55                  60

Pro Ser Leu Thr Ser Thr Asp Glu Gly Tyr Ile Gly Ile Thr Asp Ser
 65                  70                  75                  80

Thr Ser Tyr Cys Asp Val Asp Leu Asp Thr Ala Ala Asp Gly His Ile
                85                  90                  95

Glu Cys Thr Ala Lys Gly Gly Asn Ala Gly Lys Phe Asp Gly Lys Thr
            100                 105                 110

Ile Thr Leu Asn Arg Thr Ala Asp Gly Glu Trp Ser Cys Ala Ser Thr
        115                 120                 125

Leu Asp Ala Lys Tyr Lys Pro Gly Lys Cys Ser
    130                 135
```

<210> 141
<211> 59
<212> PRT
<213> Caulobacter crescentus

<400> 141
Met Thr Lys Phe Val Thr Arg Phe Leu Lys Asp Glu Ser Gly Ala Thr
1 5 10 15

Ala Ile Glu Tyr Gly Leu Ile Val Ala Leu Ile Ala Val Val Ile Val
20 25 30

Thr Ala Val Thr Thr Leu Gly Thr Asn Leu Arg Thr Ala Phe Thr Lys
35 40 45

Ala Gly Ala Ala Val Ser Thr Ala Ala Gly Thr
50 55

<210> 142
<211> 173
<212> PRT
<213> Escherichia coli

<400> 142
Met Ala Val Val Ser Phe Gly Val Asn Ala Ala Pro Thr Ile Pro Gln
1 5 10 15

Gly Gln Gly Lys Val Thr Phe Asn Gly Thr Val Val Asp Ala Pro Cys
20 25 30

Ser Ile Ser Gln Lys Ser Ala Asp Gln Ser Ile Asp Phe Gly Gln Leu
35 40 45

Ser Lys Ser Phe Leu Glu Ala Gly Gly Val Ser Lys Pro Met Asp Leu
50 55 60

Asp Ile Glu Leu Val Asn Cys Asp Ile Thr Ala Phe Lys Gly Gly Asn
65 70 75 80

Gly Ala Gln Lys Gly Thr Val Lys Leu Ala Phe Thr Gly Pro Ile Val
85 90 95

Asn Gly His Ser Asp Glu Leu Asp Thr Asn Gly Gly Thr Gly Thr Ala
100 105 110

Ile Val Val Gln Gly Ala Gly Lys Asn Val Val Phe Asp Gly Ser Glu
115 120 125

Gly Asp Ala Asn Thr Leu Lys Asp Gly Glu Asn Val Leu His Tyr Thr
130 135 140

Ala Val Val Lys Lys Ser Ser Ala Val Gly Ala Ala Val Thr Glu Gly
145 150 155 160

Ala Phe Ser Ala Val Ala Asn Phe Asn Leu Thr Tyr Gln
165 170

<210> 143
<211> 173

<212> PRT
<213> Escherichia coli

<400> 143
Met Ala Val Val Ser Phe Gly Val Asn Ala Ala Pro Thr Ile Pro Gln
1 5 10 15

Gly Gln Gly Lys Val Thr Phe Asn Gly Thr Val Val Asp Ala Pro Cys
20 25 30

Ser Ile Ser Gln Lys Ser Ala Asp Gln Ser Ile Asp Phe Gly Gln Leu
35 40 45

Ser Lys Ser Phe Leu Glu Ala Gly Gly Val Ser Lys Pro Met Asp Leu
50 55 60

Asp Ile Glu Leu Val Asn Cys Asp Ile Thr Ala Phe Lys Gly Gly Asn
65 70 75 80

Gly Ala Gln Lys Gly Thr Val Lys Leu Ala Phe Thr Gly Pro Ile Val
85 90 95

Asn Gly His Ser Asp Glu Leu Asp Thr Asn Gly Gly Thr Gly Thr Ala
100 105 110

Ile Val Val Gln Gly Ala Gly Lys Asn Val Val Phe Asp Gly Ser Glu
115 120 125

Gly Asp Ala Asn Thr Leu Lys Asp Gly Glu Asn Val Leu His Tyr Thr
130 135 140

Ala Val Val Lys Lys Ser Ser Ala Val Gly Ala Ala Val Thr Glu Gly
145 150 155 160

Ala Phe Ser Ala Val Ala Asn Phe Asn Leu Thr Tyr Gln
165 170

<210> 144
<211> 172
<212> PRT
<213> Escherichia coli

<400> 144
Met Ala Val Val Ser Phe Gly Val Asn Ala Ala Pro Thr Thr Pro Gln
1 5 10 15

Gly Gln Gly Arg Val Thr Phe Asn Gly Thr Val Val Asp Ala Pro Cys
20 25 30

Ser Ile Ser Gln Lys Ser Ala Asp Gln Ser Ile Asp Phe Gly Gln Leu
35 40 45

Ser Lys Ser Phe Leu Ala Asn Asp Gly Gln Ser Lys Pro Met Asn Leu
50 55 60

Asp Ile Glu Leu Val Asn Cys Asp Ile Thr Ala Phe Lys Asn Gly Asn
65 70 75 80

Ala Lys Thr Gly Ser Val Lys Leu Ala Phe Thr Gly Pro Thr Val Ser
85 90 95

```
Gly His Pro Ser Glu Leu Ala Thr Asn Gly Gly Pro Gly Thr Ala Ile
            100                 105                 110

Met Ile Gln Ala Ala Gly Lys Asn Val Pro Phe Asp Gly Thr Glu Gly
        115                 120                 125

Asp Pro Asn Leu Leu Lys Asp Gly Asp Asn Val Leu His Tyr Thr Thr
    130                 135                 140

Val Gly Lys Lys Ser Ser Asp Gly Asn Ala Gln Ile Thr Glu Gly Ala
145                 150                 155                 160

Phe Ser Gly Val Ala Thr Phe Asn Leu Ser Tyr Gln
                165                 170
```

<210> 145
<211> 853
<212> DNA
<213> Escherichia coli

<220>
<221> CDS
<222> (281)..(829)

<400> 145

```
acgtttctgt ggctcgacgc atcttcctca ttcttctctc caaaaaccac ctcatgcaat 60

ataaacatct ataaataaag ataacaaata gaatattaag ccaacaaata aactgaaaaa 120

gtttgtccgc gatgctttac ctctatgagt caaaatggcc ccaatgtttc atcttttggg 180

ggaaactgtg cagtgttggc agtcaaactc gttgacaaac aaagtgtaca gaacgactgc 240

ccatgtcgat ttagaaatag ttttttgaaa ggaaagcagc atg aaa att aaa act   295
                                        Met Lys Ile Lys Thr
                                          1               5

ctg gca atc gtt gtt ctg tcg gct ctg tcc ctc agt tct acg acg gct   343
Leu Ala Ile Val Val Leu Ser Ala Leu Ser Leu Ser Ser Thr Thr Ala
                 10                  15                  20

ctg gcc gct gcc acg acg gtt aat ggt ggg acc gtt cac ttt aaa ggg   391
Leu Ala Ala Ala Thr Thr Val Asn Gly Gly Thr Val His Phe Lys Gly
             25                  30                  35

gaa gtt gtt aac gcc gct tgc gca gtt gat gca ggc tct gtt gat caa   439
Glu Val Val Asn Ala Ala Cys Ala Val Asp Ala Gly Ser Val Asp Gln
         40                  45                  50

acc gtt cag tta gga cag gtt cgt acc gca tcg ctg gca cag gaa gga   487
Thr Val Gln Leu Gly Gln Val Arg Thr Ala Ser Leu Ala Gln Glu Gly
     55                  60                  65

gca acc agt tct gct gtc ggt ttt aac att cag ctg aat gat tgc gat   535
Ala Thr Ser Ser Ala Val Gly Phe Asn Ile Gln Leu Asn Asp Cys Asp
 70                  75                  80                  85

acc aat gtt gca tct aaa gcc gct gtt gcc ttt tta ggt acg gcg att   583
Thr Asn Val Ala Ser Lys Ala Ala Val Ala Phe Leu Gly Thr Ala Ile
                 90                  95                 100
```

```
gat gcg ggt cat acc aac gtt ctg gct ctg cag agt tca gct gcg ggt   631
Asp Ala Gly His Thr Asn Val Leu Ala Leu Gln Ser Ser Ala Ala Gly
            105                 110                 115

agc gca aca aac gtt ggt gtg cag atc ctg gac aga acg ggt gct gcg   679
Ser Ala Thr Asn Val Gly Val Gln Ile Leu Asp Arg Thr Gly Ala Ala
        120                 125                 130

ctg acg ctg gat ggt gcg aca ttt agt tca gaa aca acc ctg aat aac   727
Leu Thr Leu Asp Gly Ala Thr Phe Ser Ser Glu Thr Thr Leu Asn Asn
    135                 140                 145

gga acc aat acc att ccg ttc cag gcg cgt tat ttt gca acc ggg gcc   775
Gly Thr Asn Thr Ile Pro Phe Gln Ala Arg Tyr Phe Ala Thr Gly Ala
150                 155                 160                 165

gca acc ccg ggt gct gct aat gcg gat gcg acc ttc aag gtt cag tat   823
Ala Thr Pro Gly Ala Ala Asn Ala Asp Ala Thr Phe Lys Val Gln Tyr
                170                 175                 180

caa taa cctacctagg ttcagggacg ttca                               853
Gln
```

<210> 146
<211> 182
<212> PRT
<213> Escherichia coli

<400> 146

```
Met Lys Ile Lys Thr Leu Ala Ile Val Val Leu Ser Ala Leu Ser Leu
  1               5                  10                  15
Ser Ser Thr Thr Ala Leu Ala Ala Ala Thr Thr Val Asn Gly Gly Thr
             20                  25                  30
Val His Phe Lys Gly Glu Val Val Asn Ala Ala Cys Ala Val Asp Ala
         35                  40                  45
Gly Ser Val Asp Gln Thr Val Gln Leu Gly Gln Val Arg Thr Ala Ser
     50                  55                  60
Leu Ala Gln Glu Gly Ala Thr Ser Ser Ala Val Gly Phe Asn Ile Gln
 65                  70                  75                  80
Leu Asn Asp Cys Asp Thr Asn Val Ala Ser Lys Ala Ala Val Ala Phe
                 85                  90                  95
Leu Gly Thr Ala Ile Asp Ala Gly His Thr Asn Val Leu Ala Leu Gln
            100                 105                 110
Ser Ser Ala Ala Gly Ser Ala Thr Asn Val Gly Val Gln Ile Leu Asp
        115                 120                 125
Arg Thr Gly Ala Ala Leu Thr Leu Asp Gly Ala Thr Phe Ser Ser Glu
    130                 135                 140
Thr Thr Leu Asn Asn Gly Thr Asn Thr Ile Pro Phe Gln Ala Arg Tyr
145                 150                 155                 160
Phe Ala Thr Gly Ala Ala Thr Pro Gly Ala Ala Asn Ala Asp Ala Thr
                165                 170                 175
Phe Lys Val Gln Tyr Gln
            180
```

<210> 147
<211> 11
<212> PRT
<213> Artificial Sequence

<220>
<223> FLAG peptide

<400> 147
Cys Gly Gly Asp Tyr Lys Asp Asp Asp Asp Lys
1 5 10

<210> 148
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 148
ccggaattca tggacattga cccttataaa g 31

<210> 149
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 149
gtgcagtatg gtgaggtgag gaatgctcag gagactc 37

<210> 150
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 150
gsgtctcctg agcattcctc acctcaccat actgcac 37

<210> 151
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 151
cttccaaaag tgagggaaga aatgtgaaac cac 33

<210> 152

<211> 47
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 152
cgcgtcccaa gcttctaaac aacagtagtc tccggaagcg ttgatag 47

<210> 153
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> primer

<400> 153
gtggtttcac atttcttccc tcacttttgg aag 33

<210> 154
<211> 281
<212> PRT
<213> Saccharomyces cerevisiae

<400> 154

Met	Ser	Glu	Tyr	Gln	Pro	Ser	Leu	Phe	Ala	Leu	Asn	Pro	Met	Gly	Phe
1				5				10					15		
Ser	Pro	Leu	Asp	Gly	Ser	Lys	Ser	Thr	Asn	Glu	Asn	Val	Ser	Ala	Ser
		20					25					30			
Thr	Ser	Thr	Ala	Lys	Pro	Met	Val	Gly	Gln	Leu	Ile	Phe	Asp	Lys	Phe
	35					40					45				
Ile	Lys	Thr	Glu	Glu	Asp	Pro	Ile	Ile	Lys	Gln	Asp	Thr	Pro	Ser	Asn
50					55					60					
Leu	Asp	Phe	Asp	Phe	Ala	Leu	Pro	Gln	Thr	Ala	Thr	Ala	Pro	Asp	Ala
65				70					75						80
Lys	Thr	Val	Leu	Pro	Ile	Pro	Glu	Leu	Asp	Asp	Ala	Val	Val	Glu	Ser
			85					90					95		
Phe	Phe	Ser	Ser	Ser	Thr	Asp	Ser	Thr	Pro	Met	Phe	Glu	Tyr	Glu	Asn
		100					105					110			
Leu	Glu	Asp	Asn	Ser	Lys	Glu	Trp	Thr	Ser	Leu	Phe	Asp	Asn	Asp	Ile
	115					120					125				
Pro	Val	Thr	Thr	Asp	Asp	Val	Ser	Leu	Ala	Asp	Lys	Ala	Ile	Glu	Ser
130					135					140					
Thr	Glu	Glu	Val	Ser	Leu	Val	Pro	Ser	Asn	Leu	Glu	Val	Ser	Thr	Thr
145				150					155						160
Ser	Phe	Leu	Pro	Thr	Pro	Val	Leu	Glu	Asp	Ala	Lys	Leu	Thr	Gln	Thr
			165					170					175		

```
Arg Lys Val Lys Lys Pro Asn Ser Val Val Lys Lys Ser His His Val
            180                 185                 190

Gly Lys Asp Asp Glu Ser Arg Leu Asp His Leu Gly Val Val Ala Tyr
        195                 200                 205

Asn Arg Lys Gln Arg Ser Ile Pro Leu Ser Pro Ile Val Pro Glu Ser
    210                 215                 220

Ser Asp Pro Ala Ala Leu Lys Arg Ala Arg Asn Thr Glu Ala Ala Arg
225                 230                 235                 240

Arg Ser Arg Ala Arg Lys Leu Gln Arg Met Lys Gln Leu Glu Asp Lys
                245                 250                 255

Val Glu Glu Leu Leu Ser Lys Asn Tyr His Leu Glu Asn Glu Val Ala
            260                 265                 270

Arg Leu Lys Lys Leu Val Gly Glu Arg
        275                 280
```

<210> 155
<211> 181
<212> PRT
<213> Escherichia coli

<400> 155

```
Met Lys Ile Lys Thr Leu Ala Ile Val Val Leu Ser Ala Leu Ser Leu
  1               5                  10                  15

Ser Ser Thr Ala Ala Leu Ala Ala Ala Thr Thr Val Asn Gly Gly Thr
             20                  25                  30

Val His Phe Lys Gly Glu Val Val Asn Ala Ala Cys Ala Val Asp Ala
         35                  40                  45

Gly Ser Val Asp Gln Thr Val Gln Leu Gly Gln Val Arg Thr Ala Ser
     50                  55                  60

Leu Ala Gln Glu Gly Ala Thr Ser Ser Ala Val Gly Phe Asn Ile Gln
 65                  70                  75                  80

Leu Asn Asp Cys Asp Thr Asn Val Ala Ser Lys Ala Ala Val Ala Phe
                85                  90                  95

Leu Gly Thr Ala Ile Asp Ala Gly His Thr Asn Val Leu Ala Leu Gln
            100                 105                 110

Ser Ser Ala Ala Gly Ser Ala Thr Asn Val Gly Val Gln Ile Leu Asp
        115                 120                 125

Arg Thr Gly Ala Ala Leu Thr Leu Asp Gly Ala Thr Phe Ser Ser Glu
    130                 135                 140

Thr Thr Leu Asn Asn Gly Thr Asn Thr Ile Pro Phe Gln Ala Arg Tyr
145                 150                 155                 160

Phe Ala Gly Ala Ala Thr Pro Gly Ala Ala Asn Ala Asp Ala Thr Phe
                165                 170                 175
```

```
Lys Val Gln Tyr Gln
            180


<210> 156
<211> 447
<212> DNA
<213> Hepatitis B

<220>
<221> CDS
<222> (1)..(447)

<400> 156
atg gac att gac cct tat aaa gaa ttt gga gct act gtg gag tta ctc   48
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
  1               5                  10                  15

tcg ttt ttg cct tct gac ttc ttt cct tcc gta cga gat ctt cta gat   96
Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
             20                  25                  30

acc gcc gca gct ctg tat cgg gat gcc tta gag tct cct gag cat tgt   144
Thr Ala Ala Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys
         35                  40                  45

tca cct cac cat act gca ctc agg caa gca att ctt tgc tgg gga gac   192
Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp
     50                  55                  60

tta atg act cta gct acc tgg gtg ggt act aat tta gaa gat cca gca   240
Leu Met Thr Leu Ala Thr Trp Val Gly Thr Asn Leu Glu Asp Pro Ala
 65                  70                  75                  80

tct agg gac cta gta gtc agt tat gtc aac act aat gtg ggc cta aag   288
Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Val Gly Leu Lys
                 85                  90                  95

ttc aga caa tta ttg tgg ttt cac att tct tgt ctc act ttt gga aga   336
Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
            100                 105                 110

gaa acg gtt cta gag tat ttg gtc tct ttt gga gtg tgg att cgc act   384
Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
        115                 120                 125

cct cca gcc tat aga cca cca aat gcc cct atc cta tca acg ctt ccg   432
Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
    130                 135                 140

gag act act gtt gtt                                              447
Glu Thr Thr Val Val
145


<210> 157
<211> 149
<212> PRT
<213> Hepatitis B

<400> 157
```

```
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
  1               5                  10                  15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
             20                  25                  30

Thr Ala Ala Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys
         35                  40                  45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp
     50                  55                  60

Leu Met Thr Leu Ala Thr Trp Val Gly Thr Asn Leu Glu Asp Pro Ala
 65                  70                  75                  80

Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Val Gly Leu Lys
                 85                  90                  95

Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr Phe Gly Arg
            100                 105                 110

Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp Ile Arg Thr
        115                 120                 125

Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser Thr Leu Pro
    130                 135                 140

Glu Thr Thr Val Val
145
```

<210> 158
<211> 152
<212> PRT
<213> Hepatitis B

<400> 158

```
Met Asp Ile Asp Pro Tyr Lys Glu Phe Gly Ala Thr Val Glu Leu Leu
  1               5                  10                  15

Ser Phe Leu Pro Ser Asp Phe Phe Pro Ser Val Arg Asp Leu Leu Asp
             20                  25                  30

Thr Ala Ala Ala Leu Tyr Arg Asp Ala Leu Glu Ser Pro Glu His Cys
         35                  40                  45

Ser Pro His His Thr Ala Leu Arg Gln Ala Ile Leu Cys Trp Gly Asp
     50                  55                  60

Leu Met Thr Leu Ala Thr Trp Val Gly Thr Asn Leu Glu Asp Gly Gly
 65                  70                  75                  80

Lys Gly Gly Ser Arg Asp Leu Val Val Ser Tyr Val Asn Thr Asn Val
                 85                  90                  95

Gly Leu Lys Phe Arg Gln Leu Leu Trp Phe His Ile Ser Cys Leu Thr
            100                 105                 110

Phe Gly Arg Glu Thr Val Leu Glu Tyr Leu Val Ser Phe Gly Val Trp
        115                 120                 125
```

```
Ile Arg Thr Pro Pro Ala Tyr Arg Pro Pro Asn Ala Pro Ile Leu Ser
    130                 135                 140

Thr Leu Pro Glu Thr Thr Val Val
145                 150

<210>  159
<211>  132
<212>  PRT
<213>  Bacteriophage Q Beta

<400>  159
Ala Lys Leu Glu Thr Val Thr Leu Gly Asn Ile Gly Lys Asp Gly Lys
1               5                   10                  15

Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
            20                  25                  30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
        35                  40                  45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
    50                  55                  60

Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
65                  70                  75                  80

Asp Pro Ser Val Thr Arg Gln Ala Tyr Ala Asp Val Thr Phe Ser Phe
                85                  90                  95

Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
            100                 105                 110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
        115                 120                 125

Asn Pro Ala Tyr
    130


<210>  160
<211>  129
<212>  PRT
<213>  Bacteriophage R 17

<400>  160

Ala Ser Asn Phe Thr Gln Phe Val Leu Val Asn Asp Gly Gly Thr Gly
1               5                   10                  15

Asn Val Thr Val Ala Pro Ser Asn Phe Ala Asn Gly Val Ala Glu Trp
            20                  25                  30

Ile Ser Ser Asn Ser Arg Ser Gln Ala Tyr Lys Val Thr Cys Ser Val
        35                  40                  45

Arg Gln Ser Ser Ala Gln Asn Arg Lys Tyr Thr Ile Lys Val Glu Val
    50                  55                  60

Pro Lys Val Ala Thr Gln Thr Val Gly Gly Val Glu Leu Pro Val Ala
```

65 70 75 80

Ala Trp Arg Ser Tyr Leu Asn Met Glu Leu Thr Ile Pro Ile Phe Ala
85 90 95

Thr Asn Ser Asp Cys Glu Leu Ile Val Lys Ala Met Gln Gly Leu Leu
100 105 110

Lys Asp Gly Asn Pro Ile Pro Ser Ala Ile Ala Ala Asn Ser Gly Ile
115 120 125

Tyr

<210> 161
<211> 130
<212> PRT
<213> Bacteriophage fr

<400> 161

Met Ala Ser Asn Phe Glu Glu Phe Val Leu Val Asp Asn Gly Gly Thr
1 5 10 15

Gly Asp Val Lys Val Ala Pro Ser Asn Phe Ala Asn Gly Val Ala Glu
20 25 30

Trp Ile Ser Ser Asn Ser Arg Ser Gln Ala Tyr Lys Val Thr Cys Ser
35 40 45

Val Arg Gln Ser Ser Ala Asn Asn Arg Lys Tyr Thr Val Lys Val Glu
50 55 60

Val Pro Lys Val Ala Thr Gln Val Gln Gly Gly Val Glu Leu Pro Val
65 70 75 80

Ala Ala Trp Arg Ser Tyr Met Asn Met Glu Leu Thr Ile Pro Val Phe
85 90 95

Ala Thr Asn Asp Asp Cys Ala Leu Ile Val Lys Ala Leu Gln Gly Thr
100 105 110

Phe Lys Thr Gly Asn Pro Ile Ala Thr Ala Ile Ala Ala Asn Ser Gly
115 120 125

Ile Tyr
130

<210> 162
<211> 130
<212> PRT
<213> Bacteriophage GA

<400> 162

Met Ala Thr Leu Arg Ser Phe Val Leu Val Asp Asn Gly Gly Thr Gly
1 5 10 15

```
Asn Val Thr Val Val Pro Val Ser Asn Ala Asn Gly Val Ala Glu Trp
            20                  25                  30

Leu Ser Asn Asn Ser Arg Ser Gln Ala Tyr Arg Val Thr Ala Ser Tyr
        35                  40                  45

Arg Ala Ser Gly Ala Asp Lys Arg Lys Tyr Ala Ile Lys Leu Glu Val
    50                  55                  60

Pro Lys Ile Val Thr Gln Val Val Asn Gly Val Glu Leu Pro Gly Ser
65                  70                  75                  80

Ala Trp Lys Ala Tyr Ala Ser Ile Asp Leu Thr Ile Pro Ile Phe Ala
                85                  90                  95

Ala Thr Asp Asp Val Thr Val Ile Ser Lys Ser Leu Ala Gly Leu Phe
            100                 105                 110

Lys Val Gly Asn Pro Ile Ala Glu Ala Ile Ser Ser Gln Ser Gly Phe
        115                 120                 125

Tyr Ala
    130
```

<210> 163
<211> 132
<212> PRT
<213> Bacteriophage SP

<400> 163

```
Met Ala Lys Leu Asn Gln Val Thr Leu Ser Lys Ile Gly Lys Asn Gly
1               5                   10                  15

Asp Gln Thr Leu Thr Leu Thr Pro Arg Gly Val Asn Pro Thr Asn Gly
            20                  25                  30

Val Ala Ser Leu Ser Glu Ala Gly Ala Val Pro Ala Leu Glu Lys Arg
        35                  40                  45

Val Thr Val Ser Val Ala Gln Pro Ser Arg Asn Arg Lys Asn Phe Lys
    50                  55                  60

Val Gln Ile Lys Leu Gln Asn Pro Thr Ala Cys Thr Arg Asp Ala Cys
65                  70                  75                  80

Asp Pro Ser Val Thr Arg Ser Ala Phe Ala Asp Val Thr Leu Ser Phe
                85                  90                  95

Thr Ser Tyr Ser Thr Asp Glu Glu Arg Ala Leu Ile Arg Thr Glu Leu
            100                 105                 110

Ala Ala Leu Leu Ala Asp Pro Leu Ile Val Asp Ala Ile Asp Asn Leu
        115                 120                 125

Asn Pro Ala Tyr
    130
```

<210> 164
<211> 130
<212> PRT
<213> Bacteriophage MS2

<400> 164

```
Met Ala Ser Asn Phe Thr Gln Phe Val Leu Val Asp Asn Gly Gly Thr
1               5                  10                  15

Gly Asp Val Thr Val Ala Pro Ser Asn Phe Ala Asn Gly Val Ala Glu
            20                  25                  30

Trp Ile Ser Ser Asn Ser Arg Ser Gln Ala Tyr Lys Val Thr Cys Ser
        35                  40                  45

Val Arg Gln Ser Ser Ala Gln Asn Arg Lys Tyr Thr Ile Lys Val Glu
    50                  55                  60

Val Pro Lys Val Ala Thr Gln Thr Val Gly Gly Val Glu Leu Pro Val
 65                  70                  75                  80

Ala Ala Trp Arg Ser Tyr Leu Asn Met Glu Leu Thr Ile Pro Ile Phe
                85                  90                  95

Ala Thr Asn Ser Asp Cys Glu Leu Ile Val Lys Ala Met Gln Gly Leu
            100                 105                 110

Leu Lys Asp Gly Asn Pro Ile Pro Ser Ala Ile Ala Ala Asn Ser Gly
        115                 120                 125

Ile Tyr
    130
```

<210> 165
<211> 133
<212> PRT
<213> Bacteriophage M11

<400> 165

```
Met Ala Lys Leu Gln Ala Ile Thr Leu Ser Gly Ile Gly Lys Lys Gly
1               5                  10                  15

Asp Val Thr Leu Asp Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly
            20                  25                  30

Val Ala Ala Leu Ser Glu Ala Gly Ala Val Pro Ala Leu Glu Lys Arg
        35                  40                  45

Val Thr Ile Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys
    50                  55                  60

Val Gln Val Lys Ile Gln Asn Pro Thr Ser Cys Thr Ala Ser Gly Thr
65                  70                  75                  80

Cys Asp Pro Ser Val Thr Arg Ser Ala Tyr Ser Asp Val Thr Phe Ser
                85                  90                  95

Phe Thr Gln Tyr Ser Thr Val Glu Glu Arg Ala Leu Val Arg Thr Glu
            100                 105                 110
```

```
Leu Gln Ala Leu Leu Ala Asp Pro Met Leu Val Asn Ala Ile Asp Asn
        115                 120                 125

Leu Asn Pro Ala Tyr
    130


<210>  166
<211>  133
<212>  PRT
<213>  Bacteriophage MX1

<400>  166
Met Ala Lys Leu Gln Ala Ile Thr Leu Ser Gly Ile Gly Lys Asn Gly
1               5                   10                  15

Asp Val Thr Leu Asn Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly
            20                  25                  30

Val Ala Ala Leu Ser Glu Ala Gly Ala Val Pro Ala Leu Glu Lys Arg
        35                  40                  45

Val Thr Ile Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys
    50                  55                  60

Val Gln Val Lys Ile Gln Asn Pro Thr Ser Cys Thr Ala Ser Gly Thr
65                  70                  75                  80

Cys Asp Pro Ser Val Thr Arg Ser Ala Tyr Ala Asp Val Thr Phe Ser
                85                  90                  95

Phe Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Leu Val Arg Thr Glu
            100                 105                 110

Leu Lys Ala Leu Leu Ala Asp Pro Met Leu Ile Asp Ala Ile Asp Asn
        115                 120                 125

Leu Asn Pro Ala Tyr
    130


<210>  167
<211>  330
<212>  PRT
<213>  Bacteriophage NL95

<400>  167
Met Ala Lys Leu Asn Lys Val Thr Leu Thr Gly Ile Gly Lys Ala Gly
1               5                   10                  15

Asn Gln Thr Leu Thr Leu Thr Pro Arg Gly Val Asn Pro Thr Asn Gly
            20                  25                  30

Val Ala Ser Leu Ser Glu Ala Gly Ala Val Pro Ala Leu Glu Lys Arg
        35                  40                  45

Val Thr Val Ser Val Ala Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys
    50                  55                  60
```

```
Val Gln Ile Lys Leu Gln Asn Pro Thr Ala Cys Thr Lys Asp Ala Cys
65                  70                  75                  80

Asp Pro Ser Val Thr Arg Ser Gly Ser Arg Asp Val Thr Leu Ser Phe
                85                  90                  95

Thr Ser Tyr Ser Thr Glu Arg Glu Arg Ala Leu Ile Arg Thr Glu Leu
            100                 105                 110

Ala Ala Leu Leu Lys Asp Asp Leu Ile Val Asp Ala Ile Asp Asn Leu
        115                 120                 125

Asn Pro Ala Tyr Trp Ala Ala Leu Leu Ala Ala Ser Pro Gly Gly Gly
    130                 135                 140

Asn Asn Pro Tyr Pro Gly Val Pro Asp Ser Pro Asn Val Lys Pro Pro
145                 150                 155                 160

Gly Gly Thr Gly Thr Tyr Arg Cys Pro Phe Ala Cys Tyr Arg Arg Gly
                165                 170                 175

Glu Leu Ile Thr Glu Ala Lys Asp Gly Ala Cys Ala Leu Tyr Ala Cys
            180                 185                 190

Gly Ser Glu Ala Leu Val Glu Phe Glu Tyr Ala Leu Glu Asp Phe Leu
        195                 200                 205

Gly Asn Glu Phe Trp Arg Asn Trp Asp Gly Arg Leu Ser Lys Tyr Asp
    210                 215                 220

Ile Glu Thr His Arg Arg Cys Arg Gly Asn Gly Tyr Val Asp Leu Asp
225                 230                 235                 240

Ala Ser Val Met Gln Ser Asp Glu Tyr Val Leu Ser Gly Ala Tyr Asp
                245                 250                 255

Val Val Lys Met Gln Pro Pro Gly Thr Phe Asp Ser Pro Arg Tyr Tyr
            260                 265                 270

Leu His Leu Met Asp Gly Ile Tyr Val Asp Leu Ala Glu Val Thr Ala
        275                 280                 285

Tyr Arg Ser Tyr Gly Met Val Ile Gly Phe Trp Thr Asp Ser Lys Ser
    290                 295                 300

Pro Gln Leu Pro Thr Asp Phe Thr Arg Phe Asn Arg His Asn Cys Pro
305                 310                 315                 320

Val Gln Thr Val Ile Val Ile Pro Ser Leu
                325                 330
```

<210> 168
<211> 134
<212> PRT
<213> Apis mellifera

<400> 168

```
Ile Ile Tyr Pro Gly Thr Leu Trp Cys Gly His Gly Asn Lys Ser Ser
1               5                   10                  15
```

```
Gly Pro Asn Glu Leu Gly Arg Phe Lys His Thr Asp Ala Cys Cys Arg
            20                  25                  30

Thr His Asp Met Cys Pro Asp Val Met Ser Ala Gly Glu Ser Lys His
        35                  40                  45

Gly Leu Thr Asn Thr Ala Ser His Thr Arg Leu Ser Cys Asp Cys Asp
    50                  55                  60

Asp Lys Phe Tyr Asp Cys Leu Lys Asn Ser Ala Asp Thr Ile Ser Ser
65                  70                  75                  80

Tyr Phe Val Gly Lys Met Tyr Phe Asn Leu Ile Asp Thr Lys Cys Tyr
                85                  90                  95

Lys Leu Glu His Pro Val Thr Gly Cys Gly Glu Arg Thr Glu Gly Arg
            100                 105                 110

Cys Leu His Tyr Thr Val Asp Lys Ser Lys Pro Lys Val Tyr Gln Trp
        115                 120                 125

Phe Asp Leu Arg Lys Tyr
    130
```

<210> 169
<211> 129
<212> PRT
<213> Apis mellifera

<400> 169

```
Ile Ile Tyr Pro Gly Thr Leu Trp Cys Gly His Gly Asn Lys Ser Ser
1               5                   10                  15

Gly Pro Asn Glu Leu Gly Arg Phe Lys His Thr Asp Ala Cys Cys Arg
            20                  25                  30

Thr His Asp Met Cys Pro Asn Val Met Ser Ala Gly Glu Ser Lys His
        35                  40                  45

Gly Leu Thr Asp Thr Ala Ser Arg Leu Ser Cys Asn Asp Asn Asp Leu
    50                  55                  60

Phe Tyr Lys Asp Ser Ala Asp Thr Ile Ser Ser Tyr Phe Val Gly Lys
65                  70                  75                  80

Met Tyr Phe Asn Leu Ile Asn Thr Lys Cys Tyr Lys Leu Glu His Pro
                85                  90                  95

Val Thr Gly Cys Gly Glu Arg Thr Glu Gly Arg Cys Leu His Tyr Thr
            100                 105                 110

Val Asp Lys Ser Lys Pro Lys Val Tyr Gln Trp Phe Asp Leu Arg Lys
        115                 120                 125

Tyr
```

<210> 170
<211> 134
<212> PRT

<213> Apis dorsata

<400> 170
Ile Ile Tyr Pro Gly Thr Leu Trp Cys Gly His Gly Asn Val Ser Ser
1 5 10 15

Ser Pro Asp Glu Leu Gly Arg Phe Lys His Thr Asp Ser Cys Cys Arg
20 25 30

Ser His Asp Met Cys Pro Asp Val Met Ser Ala Gly Glu Ser Lys His
35 40 45

Gly Leu Thr Asn Thr Ala Ser His Thr Arg Leu Ser Cys Asp Cys Asp
50 55 60

Asp Lys Phe Tyr Asp Cys Leu Lys Asn Ser Ser Asp Thr Ile Ser Ser
65 70 75 80

Tyr Phe Val Gly Glu Met Tyr Phe Asn Ile Leu Asp Thr Lys Cys Tyr
85 90 95

Lys Leu Glu His Pro Val Thr Gly Cys Gly Lys Arg Thr Glu Gly Arg
100 105 110

Cys Leu Asn Tyr Thr Val Asp Lys Ser Lys Pro Lys Val Tyr Gln Trp
115 120 125

Phe Asp Leu Arg Lys Tyr
130

<210> 171
<211> 134
<212> PRT
<213> Apis cerana

<400> 171
Ile Ile Tyr Pro Gly Thr Leu Trp Cys Gly His Gly Asn Val Ser Ser
1 5 10 15

Gly Pro Asn Glu Leu Gly Arg Phe Lys His Thr Asp Ala Cys Cys Arg
20 25 30

Thr His Asp Met Cys Pro Asp Val Met Ser Ala Gly Glu Ser Lys His
35 40 45

Gly Leu Thr Asn Thr Ala Ser His Thr Arg Leu Ser Cys Asp Cys Asp
50 55 60

Asp Thr Phe Tyr Asp Cys Leu Lys Asn Ser Gly Glu Lys Ile Ser Ser
65 70 75 80

Tyr Phe Val Gly Lys Met Tyr Phe Asn Leu Ile Asp Thr Lys Cys Tyr
85 90 95

Lys Leu Glu His Pro Val Thr Gly Cys Gly Glu Arg Thr Glu Gly Arg
100 105 110

Cys Leu Arg Tyr Thr Val Asp Lys Ser Lys Pro Lys Val Tyr Gln Trp
115 120 125

```
Phe Asp Leu Arg Lys Tyr
    130
```

<210> 172
<211> 136
<212> PRT
<213> Bombus pennsylvanicus

<400> 172

```
Ile Ile Tyr Pro Gly Thr Leu Trp Cys Gly Asn Gly Asn Ile Ala Asn
1               5                  10                  15

Gly Thr Asn Glu Leu Gly Leu Trp Lys Glu Thr Asp Ala Cys Cys Arg
            20                  25                  30

Thr His Asp Met Cys Pro Asp Ile Ile Glu Ala His Gly Ser Lys His
        35                  40                  45

Gly Leu Thr Asn Pro Ala Asp Tyr Thr Arg Leu Asn Cys Glu Cys Asp
    50                  55                  60

Glu Glu Phe Arg His Cys Leu His Asn Ser Gly Asp Ala Val Ser Ala
65                  70                  75                  80

Ala Phe Val Gly Arg Thr Tyr Phe Thr Ile Leu Gly Thr Gln Cys Phe
                85                  90                  95

Arg Leu Asp Tyr Pro Ile Val Lys Cys Lys Val Lys Ser Thr Ile Leu
            100                 105                 110

Arg Glu Cys Lys Glu Tyr Glu Phe Asp Thr Asn Ala Pro Gln Lys Tyr
        115                 120                 125

Gln Trp Phe Asp Val Leu Ser Tyr
    130                 135
```

<210> 173
<211> 142
<212> PRT
<213> Heloderma suspectum

<400> 173

```
Gly Ala Phe Ile Met Pro Gly Thr Leu Trp Cys Gly Ala Gly Asn Ala
1               5                  10                  15

Ala Ser Asp Tyr Ser Gln Leu Gly Thr Glu Lys Asp Thr Asp Met Cys
            20                  25                  30

Cys Arg Asp His Asp His Cys Ser Asp Thr Met Ala Ala Leu Glu Tyr
        35                  40                  45

Lys His Gly Met Arg Asn Tyr Arg Pro His Thr Val Ser His Cys Asp
    50                  55                  60

Cys Asp Asn Gln Phe Arg Ser Cys Leu Met Asn Val Lys Asp Arg Thr
65                  70                  75                  80

Ala Asp Leu Val Gly Met Thr Tyr Phe Thr Val Leu Lys Ile Ser Cys
```

```
                85                  90                  95

Phe Glu Leu Glu Glu Gly Glu Gly Cys Val Asp Asn Asn Phe Ser Gln
            100                 105                 110

Gln Cys Thr Lys Ser Glu Ile Met Pro Val Ala Lys Leu Val Ser Ala
        115                 120                 125

Ala Pro Tyr Gln Ala Gln Ala Glu Thr Gln Ser Gly Glu Gly
    130                 135                 140
```

<210> 174
<211> 143
<212> PRT
<213> Heloderma suspectum

<400> 174

```
Gly Ala Phe Ile Met Pro Gly Thr Leu Trp Cys Gly Ala Gly Asn Ala
1               5                   10                  15

Ala Ser Asp Tyr Ser Gln Leu Gly Thr Glu Lys Asp Thr Asp Met Cys
            20                  25                  30

Cys Arg Asp His Asp His Cys Glu Asn Trp Ile Ser Ala Leu Glu Tyr
        35                  40                  45

Lys His Gly Met Arg Asn Tyr Tyr Pro Ser Thr Ile Ser His Cys Asp
    50                  55                  60

Cys Asp Asn Gln Phe Arg Ser Cys Leu Met Lys Leu Lys Asp Gly Thr
65                  70                  75                  80

Ala Asp Tyr Val Gly Gln Thr Tyr Phe Asn Val Leu Lys Ile Pro Cys
                85                  90                  95

Phe Glu Leu Glu Glu Gly Glu Gly Cys Val Asp Trp Asn Phe Trp Leu
            100                 105                 110

Glu Cys Thr Glu Ser Lys Ile Met Pro Val Ala Lys Leu Val Ser Ala
        115                 120                 125

Ala Pro Tyr Gln Ala Gln Ala Glu Thr Gln Ser Gly Glu Gly Arg
    130                 135                 140
```

<210> 175
<211> 142
<212> PRT
<213> Heloderma suspectum

<400> 175

```
Gly Ala Phe Ile Met Pro Gly Thr Leu Trp Cys Gly Ala Gly Asn Ala
1               5                   10                  15

Ala Ser Asp Tyr Ser Gln Leu Gly Thr Glu Lys Asp Thr Asp Met Cys
            20                  25                  30

Cys Arg Asp His Asp His Cys Glu Asn Trp Ile Ser Ala Leu Glu Tyr
        35                  40                  45
```

```
Lys His Gly Met Arg Asn Tyr Tyr Pro Ser Thr Ile Ser His Cys Asp
    50                  55                  60

Cys Asp Asn Gln Phe Arg Ser Cys Leu Met Lys Leu Lys Asp Gly Thr
65                  70                  75                  80

Ala Asp Tyr Val Gly Gln Thr Tyr Phe Asn Val Leu Lys Ile Pro Cys
                85                  90                  95

Phe Glu Leu Glu Glu Gly Glu Gly Cys Val Asp Trp Asn Phe Trp Leu
            100                 105                 110

Glu Cys Thr Glu Ser Lys Ile Met Pro Val Ala Lys Leu Val Ser Ala
        115                 120                 125




Ala Pro Tyr Gln Ala Gln Ala Glu Thr Gln Ser Gly Glu Gly
    130                 135                 140


<210>  176
<211>  574
<212>  PRT
<213>  IgE heavy chain

<400>  176

Met Asp Trp Thr Trp Ile Leu Phe Leu Val Ala Ala Ala Thr Arg Val
1               5                   10                  15

His Ser Gln Thr Gln Leu Val Gln Ser Gly Ala Glu Val Arg Lys Pro
            20                  25                  30

Gly Ala Ser Val Arg Val Ser Cys Lys Ala Ser Gly Tyr Thr Phe Ile
        35                  40                  45

Asp Ser Tyr Ile His Trp Ile Arg Gln Ala Pro Gly His Gly Leu Glu
    50                  55                  60

Trp Val Gly Trp Ile Asn Pro Asn Ser Gly Gly Thr Asn Tyr Ala Pro
65                  70                  75                  80

Arg Phe Gln Gly Arg Val Thr Met Thr Arg Asp Ala Ser Phe Ser Thr
                85                  90                  95

Ala Tyr Met Asp Leu Arg Ser Leu Arg Ser Asp Asp Ser Ala Val Phe
            100                 105                 110

Tyr Cys Ala Lys Ser Asp Pro Phe Trp Ser Asp Tyr Tyr Asn Phe Asp
        115                 120                 125

Tyr Ser Tyr Thr Leu Asp Val Trp Gly Gln Gly Thr Thr Val Thr Val
    130                 135                 140

Ser Ser Ala Ser Thr Gln Ser Pro Ser Val Phe Pro Leu Thr Arg Cys
145                 150                 155                 160

Cys Lys Asn Ile Pro Ser Asn Ala Thr Ser Val Thr Leu Gly Cys Leu
```

```
                 165                 170                 175

Ala Thr Gly Tyr Phe Pro Glu Pro Val Met Val Thr Trp Asp Thr Gly
            180                 185                 190

Ser Leu Asn Gly Thr Thr Met Thr Leu Pro Ala Thr Thr Leu Thr Leu
        195                 200                 205

Ser Gly His Tyr Ala Thr Ile Ser Leu Leu Thr Val Ser Gly Ala Trp
    210                 215                 220

Ala Lys Gln Met Phe Thr Cys Arg Val Ala His Thr Pro Ser Ser Thr
225                 230                 235                 240

Asp Trp Val Asp Asn Lys Thr Phe Ser Val Cys Ser Arg Asp Phe Thr
                245                 250                 255

Pro Pro Thr Val Lys Ile Leu Gln Ser Ser Cys Asp Gly Gly Gly His
            260                 265                 270

Phe Pro Pro Thr Ile Gln Leu Leu Cys Leu Val Ser Gly Tyr Thr Pro
        275                 280                 285

Gly Thr Ile Asn Ile Thr Trp Leu Glu Asp Gly Gln Val Met Asp Val
    290                 295                 300

Asp Leu Ser Thr Ala Ser Thr Thr Gln Glu Gly Glu Leu Ala Ser Thr
305                 310                 315                 320

Gln Ser Glu Leu Thr Leu Ser Gln Lys His Trp Leu Ser Asp Arg Thr
                325                 330                 335

Tyr Thr Cys Gln Val Thr Tyr Gln Gly His Thr Phe Glu Asp Ser Thr
            340                 345                 350

Lys Lys Cys Ala Asp Ser Asn Pro Arg Gly Val Ser Ala Tyr Leu Ser
        355                 360                 365

Arg Pro Ser Pro Phe Asp Leu Phe Ile Arg Lys Ser Pro Thr Ile Thr
    370                 375                 380

Cys Leu Val Val Asp Leu Ala Pro Ser Lys Gly Thr Val Asn Leu Thr
385                 390                 395                 400

Trp Ser Arg Ala Ser Gly Lys Pro Val Asn His Ser Thr Arg Lys Glu
                405                 410                 415

Glu Lys Gln Arg Asn Gly Thr Leu Thr Val Thr Ser Thr Leu Pro Val
            420                 425                 430

Gly Thr Arg Asp Trp Ile Glu Gly Glu Thr Tyr Gln Cys Arg Val Thr
        435                 440                 445

His Pro His Leu Pro Arg Ala Leu Met Arg Ser Thr Thr Lys Thr Ser
    450                 455                 460

Gly Pro Arg Ala Ala Pro Glu Val Tyr Ala Phe Ala Thr Pro Glu Trp
465                 470                 475                 480

Pro Gly Ser Arg Asp Lys Arg Thr Leu Ala Cys Leu Ile Gln Asn Phe
                485                 490                 495
```

```
Met Pro Glu Asp Ile Ser Val Gln Trp Leu His Asn Glu Val Gln Leu
            500                 505                 510

Pro Asp Ala Arg His Ser Thr Thr Gln Pro Arg Lys Thr Lys Gly Ser
        515                 520                 525

Gly Phe Phe Val Phe Ser Arg Leu Glu Val Thr Arg Ala Glu Trp Glu
    530                 535                 540

Gln Lys Asp Glu Phe Ile Cys Arg Ala Val His Glu Ala Ala Ser Pro
545                 550                 555                 560

Ser Gln Thr Val Gln Arg Ala Val Ser Val Asn Pro Gly Lys
                565                 570
```

<210> 177

<400> 177
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<210> 178
<211> 13
<212> PRT
<213> IgE Peptides

<400> 178
Cys Gly Gly Val Asn Leu Thr Trp Ser Arg Ala Ser Gly
1   5   10

<210> 179
<211> 8
<212> PRT
<213> IgE Mimotype

<400> 179
Ile Asn His Arg Gly Tyr Trp Val
1   5

<210> 180
<211> 8
<212> PRT
<213> IgE Mimotype

<400> 180
Arg Asn His Arg Gly Tyr Trp Val
1   5

<210> 181
<211> 10
<212> PRT
<213> IgE Mimotype

<400> 181

Arg Ser Arg Ser Gly Gly Tyr Trp Leu Trp
1 5 10

<210> 182
<211> 10
<212> PRT
<213> IgE Mimotype

<400> 182
Val Asn Leu Thr Trp Ser Arg Ala Ser Gly
1 5 10

<210> 183
<211> 10
<212> PRT
<213> IgE Mimotype

<400> 183
Val Asn Leu Pro Trp Ser Arg Ala Ser Gly
1 5 10

<210> 184
<211> 10
<212> PRT
<213> IgE Mimotype

<400> 184
Val Asn Leu Thr Trp Ser Phe Gly Leu Glu
1 5 10

<210> 185
<211> 10
<212> PRT
<213> IgE Mimotype

<400> 185
Val Asn Leu Pro Trp Ser Phe Gly Leu Glu
1 5 10

<210> 186
<211> 10
<212> PRT
<213> IgE Mimotype

<400> 186
Val Asn Arg Pro Trp Ser Phe Gly Leu Glu
1 5 10

<210> 187
<211> 10
<212> PRT
<213> IgE Mimotype

<400> 187

Val Lys Leu Pro Trp Arg Phe Tyr Gln Val
1 5 10

<210> 188
<211> 10
<212> PRT
<213> IgE Mimotype

<400> 188

Val Trp Thr Ala Cys Gly Tyr Gly Arg Met
1 5 10

<210> 189
<211> 7
<212> PRT
<213> IgE Mimotype

<400> 189
Gly Thr Val Ser Thr Leu Ser
1 5

<210> 190
<211> 7
<212> PRT
<213> IgE Mimotype

<400> 190
Leu Leu Asp Ser Arg Tyr Trp
1 5

<210> 191
<211> 7
<212> PRT
<213> IgE Mimotype

<400> 191
Gln Pro Ala His Ser Leu Gly
1 5

<210> 192
<211> 7
<212> PRT
<213> IgE Mimotype

<400> 192
Leu Trp Gly Met Gln Gly Arg
1 5

<210> 193
<211> 15
<212> PRT
<213> IgE Mimotype

<400> 193

Leu Thr Leu Ser His Pro His Trp Val Leu Asn His Phe Val Ser
1 5 10 15

<210> 194
<211> 9
<212> PRT
<213> IgE Mimotype

<400> 194
Ser Met Gly Pro Asp Gln Thr Leu Arg
1 5

<210> 195
<211> 6
<212> PRT
<213> IgE Mimotype

<400> 195
Val Asn Leu Thr Trp Ser
1 5

<210> 196
<211> 56
<212> DNA
<213> Oligonucleotide Primer

<400> 196
tagatgatta cgccaagctt ataatagaaa tagtttttg aaaggaaagc agcatg 56

<210> 197
<211> 45
<212> DNA
<213> Oligonucleotide Primer

<400> 197
gtcaaaggcc ttgtcgacgt tattccatta cgcccgtcat tttgg 45

<210> 198
<211> 4623
<212> DNA
<213> pFIMAIC

<400> 198
agacgaaagg gcctcgtgat acgcctattt ttataggtta atgtcatgat aataatggtt 60

tcttagacgt caggtggcac ttttcgggga aatgtgcgcg gaacccctat ttgtttattt 120

ttctaaatac attcaaatat gtatccgctc atgagacaat aaccctgata aatgcttcaa 180

taatattgaa aaaggaagag tatgagtatt caacatttcc gtgtcgccct tattcccttt 240

tttgcggcat tttgccttcc tgtttttgct cacccagaaa cgctggtgaa agtaaaagat 300

gctgaagatc agttgggtgc acgagtgggt tacatcgaac tggatctcaa cagcggtaag 360

atccttgaga gttttcgccc cgaagaacgt tttccaatga tgagcacttt taaagttctg 420

ctatgtggcg cggtattatc ccgtattgac gccgggcaag agcaactcgg tcgccgcata 480

cactattctc agaatgactt ggttgagtac tcaccagtca cagaaaagca tcttacggat 540

ggcatgacag taagagaatt atgcagtgct gccataacca tgagtgataa cactgcggcc 600

aacttacttc tgacaacgat cggaggaccg aaggagctaa ccgcttttt gcacaacatg 660

ggggatcatg taactcgcct tgatcgttgg gaaccggagc tgaatgaagc cataccaaac 720

gacgagcgtg acaccacgat gcctgtagca atggcaacaa cgttgcgcaa actattaact 780

ggcgaactac ttactctagc ttcccggcaa caattaatag actggatgga ggcggataaa 840

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atccttttg ataatctcat gaccaaaatc ccttaacgtg agttttcgtt ccactgagcg 1200

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gggttggact caagacgata gttaccggat aaggcgcagc ggtcgggctg aacgggggt 1560

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gagctatgag aaagcgccac gcttcccgaa gggagaaagg cggacaggta tccggtaagc 1680

ggcagggtcg gaacaggaga gcgcacgagg gagcttccag ggggaaacgc ctggtatctt 1740

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ggggggcgga gcctatggaa aaacgccagc aacgcggcct ttttacggtt cctggccttt 1860

tgctggcctt ttgctcacat gttctttcct gcgttatccc ctgattctgt ggataaccgt 1920

attaccgcct ttgagtgagc tgataccgct cgccgcagcc gaacgaccga gcgcagcgag 1980

tcagtgagcg aggaagcgga agagcgccca atacgcaaac cgcctctccc cgcgcgttgg 2040

ccgattcatt aatgcagctg gcacgacagg tttcccgact ggaaagcggg cagtgagcgc 2100

aacgcaatta atgtgagtta gctcactcat taggcacccc aggctttaca ctttatgctt 2160

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attaaaactc tggcaatcgt tgttctgtcg gctctgtccc tcagttctac agcggctctg 2340

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ggccggaaat aaatggaata ccacgttgcc cggcggaaat atgcaatttc agggcgtcat 3000

tattgcggaa acttgccgga ttgaagccgg tgataaacaa atgacggtca atatggggca 3060

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tcatttacgg gaatgtagca cggtggtgag tgaacgtgta ggtgtggcgt ttcacggtgt 3180

cgcggatggt aaaaatccgg atgtgctttc cgtgggagag gggccaggga tagccaccaa 3240

tattggcgta gcgttgtttg atgatgaagg aaacctcgta ccgattaatc gtcctccagc 3300

aaactggaaa cggctttatt caggctctac ttcgctacat ttcatcgcca aatatcgtgc 3360

taccgggcgt cgggttactg gcggcatcgc caatgcccag gcctggttct ctttaaccta 3420

tcagtaattg ttcagcagat aatgtgataa caggaacagg acagtgagta ataaaaacgt 3480

caatgtaagg aaatcgcagg aaataacatt ctgcttgctg gcaggtatcc tgatgttcat 3540

ggcaatgatg gttgccggac gcgctgaagc gggagtggcc ttaggtgcga ctcgcgtaat 3600

ttatccggca gggcaaaaac aagagcaact tgccgtgaca aataatgatg aaaatagtac 3660

ctatttaatt caatcatggg tggaaaatgc cgatggtgta aaggatggtc gttttatcgt 3720

gacgcctcct ctgtttgcga tgaagggaaa aaaagagaat accttacgta ttcttgatgc 3780

aacaaataac caattgccac aggaccggga aagtttattc tggatgaacg ttaaagcgat 3840

tccgtcaatg gataaatcaa aattgactga gaatacgcta cagctcgcaa ttatcagccg 3900

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gacggtaaca gagttgaatg ccggaacccg ggttcttgaa aatgcattgg tgcctccaat 4080

gggcgaaagc acggttaaat tgccttctga tgcaggaagc aatattactt accgaacaat 4140

aaatgattat ggcgcactta cccccaaaat gacgggcgta atggaataac gtcgactcta 4200

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taaagcgcct ggcgcaaaag atgcaaaagt cgaaaaccag acgggggtgc gtaccgactg 6480

gcgtggttat gccgtgctgc cttatgccac tgaatatcgg gaaaatagag tggcgctgga 6540

taccaatacc ctggctgata acgtcgattt agataacgcg gttgctaacg ttgttcccac 6600

tcgtggggcg atcgtgcgag cagagtttaa agcgcgcgtt gggataaaac tgctcatgac 6660

gctgacccac aataataagc cgctgccgtt tggggcgatg gtgacatcag agagtagcca 6720

gagtagcggc attgttgcgg ataatggtca ggtttacctc agcggaatgc ctttagcggg 6780

aaaagttcag gtgaaatggg gagaagagga aaatgctcac tgtgtcgcca attatcaact 6840

gccaccagag agtcagcagc agttattaac ccagctatca gctgaatgtc gttaaggggg 6900

cgtgatgaga aacaaacctt tttatcttct gtgcgctttt ttgtggctgg cggtgagtca 6960

cgctttggct gcggatagca cgattactat ccgcggctat gtcagggata acggctgtag 7020

tgtggccgct gaatcaacca attttactgt tgatctgatg gaaaacgcgg cgaagcaatt 7080

taacaacatt ggcgcgacga ctcctgttgt tccatttcgt attttgctgt caccctgtgg 7140

taatgccgtt tctgccgtaa aggttgggtt tactggcgtt gcagatagcc acaatgccaa 7200

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tgagcagcaa aatcaaatac cccttaatgc tccatcgtcc gcgctttcgt ggacgaccct 7320

gacgccgggt aaaccaaata cgctgaattt ttacgcccgg ctaatggcga cacaggtgcc 7380

tgtcactgcg gggcatatca atgccacggc taccttcact cttgaatatc agtaactgga 7440

gatgctcatg aaatggtgca aacgtgggta tgtattggcg gcaatattgg cgctcgcaag 7500

tgcgacgata caggcagccg atgtcaccat cacggtgaac ggtaaggtcg tcgccaaacc 7560

gtgtacggtt tccaccacca atgccacggt tgatctcggc gatctttatt ctttcagtct 7620

tatgtctgcc ggggcggcat cggcctggca tgatgttgcg cttgagttga ctaattgtcc 7680

ggtgggaacg tcgagggtca ctgccagctt cagcggggca gccgacagta ccggatatta 7740

taaaaaccag gggaccgcgc aaaacatcca gttagagcta caggatgaca gtggcaacac 7800

attgaatact ggcgcaacca aaacagttca ggtggatgat tcctcacaat cagcgcactt 7860

cccgttacag gtcagagcat tgacagtaaa tggcggagcc actcagggaa ccattcaggc 7920

agtgattagc atcacctata cctacagctg aacccgaaga gatgattgta atgaaacgag 7980

ttattaccct gtttgctgta ctgctgatgg gctggtcggt aaatgcctgg tcattcgcct 8040

gtaaaaccgc caatggtacc gagctcgaat tcactggccg tcgttttaca acgtcgtgac 8100

tgggaaaacc ctggcgttac ccaacttaat cgccttgcag cacatccccc tttcgccagc 8160

tggcgtaata gcgaagaggc ccgcaccgat cgcccttccc aacagttgcg cagcctgaat 8220

ggcgaatggc gcctgatgcg gtattttctc cttacgcatc tgtgcggtat ttcacaccgc 8280

atatggtgca ctctcagtac aatctgctct gatgccgcat agttaagcca gccccgacac 8340

ccgccaacac ccgctgacgc gccctgacgg gcttgtctgc tcccggcatc cgcttacaga 8400

caagctgtga ccgtctccgg gagctgcatg tgtcagaggt tttcaccgtc atcaccgaaa 8460

cgcg 8464

<210> 207
<211> 13
<212> PRT
<213> Ce3epitope

<400> 207
Cys Gly Gly Val Asn Leu Thr Trp Ser Arg Ala Ser Gly
1 5 10

<210> 208

<211> 13
<212> PRT
<213> Ce3mimotope

<400> 208
Cys Gly Gly Val Asn Leu Pro Trp Ser Phe Gly Leu Glu
1 5 10

<210> 209
<211> 9
<212> PRT
<213> Bee venom phospholipase A2 cloning vector

<400> 209
Ala Ala Ala Ser Gly Gly Cys Gly Gly
1 5

<210> 210
<211> 145
<212> PRT
<213> PLA2 fusion protein

<400> 210
Met Ala Ile Ile Tyr Pro Gly Thr Leu Trp Cys Gly His Gly Asn Lys
1 5 10 15

Ser Ser Gly Pro Asn Glu Leu Gly Arg Phe Lys His Thr Asp Ala Cys
20 25 30

Cys Arg Thr Gln Asp Met Cys Pro Asp Val Met Ser Ala Gly Glu Ser
35 40 45

Lys His Gly Leu Thr Asn Thr Ala Ser His Thr Arg Leu Ser Cys Asp
50 55 60

Cys Asp Asp Lys Phe Tyr Asp Cys Leu Lys Asn Ser Ala Asp Thr Ile
65 70 75 80

Ser Ser Tyr Phe Val Gly Lys Met Tyr Phe Asn Leu Ile Asp Thr Lys
85 90 95

Cys Tyr Lys Leu Glu His Pro Val Thr Gly Cys Gly Glu Arg Thr Glu
100 105 110

Gly Arg Cys Leu His Tyr Thr Val Asp Lys Ser Lys Pro Lys Val Tyr
115 120 125

Gln Trp Phe Asp Leu Arg Lys Tyr Ala Ala Ala Ser Gly Gly Cys Gly
130 135 140

Gly
145

<210> 211
<211> 17
<212> PRT
<213> Ce4mimotope

<400> 211
Gly Glu Phe Cys Ile Asn His Arg Gly Tyr Trp Val Cys Gly Asp Pro

1 5 10 15

Ala

<210> 212
<211> 27
<212> PRT
<213> Synthetic M2 Peptide

<400> 212
Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly Cys
1 5 10 15

Arg Cys Asn Gly Ser Ser Asp Gly Gly Gly Cys
20 25

<210> 213
<211> 97
<212> PRT
<213> Matrix protein M2

<400> 213
Met Ser Leu Leu Thr Glu Val Glu Thr Pro Ile Arg Asn Glu Trp Gly
1 5 10 15

Cys Arg Cys Asn Gly Ser Ser Asp Pro Leu Ala Ile Ala Ala Asn Ile
20 25 30

Ile Gly Ile Leu His Leu Ile Leu Trp Ile Leu Asp Arg Leu Phe Phe
35 40 45

Lys Cys Ile Tyr Arg Arg Phe Lys Tyr Gly Leu Lys Gly Gly Pro Ser
50 55 60

Thr Glu Gly Val Pro Lys Ser Met Arg Glu Glu Tyr Arg Lys Glu Gln
65 70 75 80

Gln Ser Ala Val Asp Ala Asp Asp Gly His Phe Val Ser Ile Glu Leu
85 90 95

Glu

<210> 214

<211> 42

<212> DNA

<213> Oligonucleotide

<400> 214
taaccgaatt caggaggtaa aaacatatgg ctatcatcta cc 42

<210> 215
<211> 129

<212> PRT
<213> Bacteriophage f2

<400> 215

Ala Ser Asn Phe Thr Gln Phe Val Leu Val Asn Asp Gly Gly Thr Gly
1 5 10 15

Asn Val Thr Val Ala Pro Ser Asn Phe Ala Asn Gly Val Ala Glu Trp
20 25 30

Ile Ser Ser Asn Ser Arg Ser Gln Ala Tyr Lys Val Thr Cys Ser Val
35 40 45

Arg Gln Ser Ser Ala Gln Asn Arg Lys Tyr Thr Ile Lys Val Glu Val
50 55 60

Pro Lys Val Ala Thr Gln Thr Val Gly Gly Val Glu Leu Pro Val Ala
65 70 75 80

Ala Trp Arg Ser Tyr Leu Asn Leu Glu Leu Thr Ile Pro Ile Phe Ala
85 90 95

Thr Asn Ser Asp Cys Glu Leu Ile Val Lys Ala Met Gln Gly Leu Leu
100 105 110

Lys Asp Gly Asn Pro Ile Pro Ser Ala Ile Ala Ala Asn Ser Gly Ile
115 120 125

Tyr

<210> 216
<211> 17
<212> PRT
<213> Circular Mimotope

<400> 216

Gly Glu Phe Cys Ile Asn His Arg Gly Tyr Trp Val Cys Gly Asp Pro
1 5 10 15

Ala

<210> 217
<211> 329
<212> PRT
<213> Bacteriophage Q-beta

<400> 217

Met Ala Lys Leu Glu Thr Val Thr Leu Gly Asn Ile Gly Lys Asp Gly
1 5 10 15

Lys Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly
20 25 30

Val Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg
35 40 45

```
Val Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys
    50                  55                  60

Val Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser
65                  70                  75                  80

Cys Asp Pro Ser Val Thr Arg Gln Ala Tyr Ala Asp Val Thr Phe Ser
                85                  90                  95

Phe Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu
            100                 105                 110

Leu Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln
        115                 120                 125

Leu Asn Pro Ala Tyr Trp Thr Leu Leu Ile Ala Gly Gly Gly Ser Gly
    130                 135                 140

Ser Lys Pro Asp Pro Val Ile Pro Asp Pro Pro Ile Asp Pro Pro Pro
145                 150                 155                 160

Gly Thr Gly Lys Tyr Thr Cys Pro Phe Ala Ile Trp Ser Leu Glu Glu
                165                 170                 175

Val Tyr Glu Pro Pro Thr Lys Asn Arg Pro Trp Pro Ile Tyr Asn Ala
            180                 185                 190

Val Glu Leu Gln Pro Arg Glu Phe Asp Val Ala Leu Lys Asp Leu Leu
        195                 200                 205

Gly Asn Thr Lys Trp Arg Asp Trp Asp Ser Arg Leu Ser Tyr Thr Thr
    210                 215                 220

Phe Arg Gly Cys Arg Gly Asn Gly Tyr Ile Asp Leu Asp Ala Thr Tyr
225                 230                 235                 240

Leu Ala Thr Asp Gln Ala Met Arg Asp Gln Lys Tyr Asp Ile Arg Glu
                245                 250                 255

Gly Lys Lys Pro Gly Ala Phe Gly Asn Ile Glu Arg Phe Ile Tyr Leu
            260                 265                 270

Lys Ser Ile Asn Ala Tyr Cys Ser Leu Ser Asp Ile Ala Ala Tyr His
        275                 280                 285

Ala Asp Gly Val Ile Val Gly Phe Trp Arg Asp Pro Ser Ser Gly Gly
    290                 295                 300

Ala Ile Pro Phe Asp Phe Thr Lys Phe Asp Lys Thr Lys Cys Pro Ile
305                 310                 315                 320

Gln Ala Val Ile Val Val Pro Arg Ala
                325
```

<210> 218
<211> 770
<212> PRT

<213> Amyloid-Beta Protein (Homo Sapiens)

<400> 218

```
Met Leu Pro Gly Leu Ala Leu Leu Leu Leu Ala Ala Trp Thr Ala Arg
1               5                  10                  15

Ala Leu Glu Val Pro Thr Asp Gly Asn Ala Gly Leu Leu Ala Glu Pro
            20                  25                  30

Gln Ile Ala Met Phe Cys Gly Arg Leu Asn Met His Met Asn Val Gln
        35                  40                  45

Asn Gly Lys Trp Asp Ser Asp Pro Ser Gly Thr Lys Thr Cys Ile Asp
    50                  55                  60

Thr Lys Glu Gly Ile Leu Gln Tyr Cys Gln Glu Val Tyr Pro Glu Leu
65                  70                  75                  80

Gln Ile Thr Asn Val Val Glu Ala Asn Gln Pro Val Thr Ile Gln Asn
                85                  90                  95

Trp Cys Lys Arg Gly Arg Lys Gln Cys Lys Thr His Pro His Phe Val
            100                 105                 110

Ile Pro Tyr Arg Cys Leu Val Gly Glu Phe Val Ser Asp Ala Leu Leu
        115                 120                 125

Val Pro Asp Lys Cys Lys Phe Leu His Gln Glu Arg Met Asp Val Cys
    130                 135                 140

Glu Thr His Leu His Trp His Thr Val Ala Lys Glu Thr Cys Ser Glu
145                 150                 155                 160

Lys Ser Thr Asn Leu His Asp Tyr Gly Met Leu Leu Pro Cys Gly Ile
                165                 170                 175

Asp Lys Phe Arg Gly Val Glu Phe Val Cys Cys Pro Leu Ala Glu Glu
            180                 185                 190

Ser Asp Asn Val Asp Ser Ala Asp Ala Glu Glu Asp Asp Ser Asp Val
        195                 200                 205

Trp Trp Gly Gly Ala Asp Thr Asp Tyr Ala Asp Gly Ser Glu Asp Lys
    210                 215                 220

Val Val Glu Val Ala Glu Glu Glu Glu Val Ala Glu Val Glu Glu Glu
225                 230                 235                 240

Glu Ala Asp Asp Asp Glu Asp Asp Glu Asp Gly Asp Glu Val Glu Glu
                245                 250                 255

Glu Ala Glu Glu Pro Tyr Glu Glu Ala Thr Glu Arg Thr Thr Ser Ile
            260                 265                 270

Ala Thr Thr Thr Thr Thr Thr Thr Glu Ser Val Glu Glu Val Val Arg
        275                 280                 285

Glu Val Cys Ser Glu Gln Ala Glu Thr Gly Pro Cys Arg Ala Met Ile
    290                 295                 300

Ser Arg Trp Tyr Phe Asp Val Thr Glu Gly Lys Cys Ala Pro Phe Phe
305                 310                 315                 320
```

```
Tyr Gly Gly Cys Gly Gly Asn Arg Asn Asn Phe Asp Thr Glu Glu Tyr
                325                 330                 335

Cys Met Ala Val Cys Gly Ser Ala Met Ser Gln Ser Leu Leu Lys Thr
            340                 345                 350

Thr Gln Glu Pro Leu Ala Arg Asp Pro Val Lys Leu Pro Thr Thr Ala
        355                 360                 365

Ala Ser Thr Pro Asp Ala Val Asp Lys Tyr Leu Glu Thr Pro Gly Asp
    370                 375                 380

Glu Asn Glu His Ala His Phe Gln Lys Ala Lys Glu Arg Leu Glu Ala
385                 390                 395                 400

Lys His Arg Glu Arg Met Ser Gln Val Met Arg Glu Trp Glu Glu Ala
                405                 410                 415

Glu Arg Gln Ala Lys Asn Leu Pro Lys Ala Asp Lys Lys Ala Val Ile
            420                 425                 430

Gln His Phe Gln Glu Lys Val Glu Ser Leu Glu Gln Glu Ala Ala Asn
        435                 440                 445

Glu Arg Gln Gln Leu Val Glu Thr His Met Ala Arg Val Glu Ala Met
    450                 455                 460

Leu Asn Asp Arg Arg Arg Leu Ala Leu Glu Asn Tyr Ile Thr Ala Leu
465                 470                 475                 480

Gln Ala Val Pro Pro Arg Pro Arg His Val Phe Asn Met Leu Lys Lys
                485                 490                 495

Tyr Val Arg Ala Glu Gln Lys Asp Arg Gln His Thr Leu Lys His Phe
            500                 505                 510

Glu His Val Arg Met Val Asp Pro Lys Lys Ala Ala Gln Ile Arg Ser
        515                 520                 525

Gln Val Met Thr His Leu Arg Val Ile Tyr Glu Arg Met Asn Gln Ser
    530                 535                 540

Leu Ser Leu Leu Tyr Asn Val Pro Ala Val Ala Glu Glu Ile Gln Asp
545                 550                 555                 560

Glu Val Asp Glu Leu Leu Gln Lys Glu Gln Asn Tyr Ser Asp Asp Val
                565                 570                 575

Leu Ala Asn Met Ile Ser Glu Pro Arg Ile Ser Tyr Gly Asn Asp Ala
            580                 585                 590

Leu Met Pro Ser Leu Thr Glu Thr Lys Thr Thr Val Glu Leu Leu Pro
        595                 600                 605

Val Asn Gly Glu Phe Ser Leu Asp Asp Leu Gln Pro Trp His Ser Phe
    610                 615                 620

Gly Ala Asp Ser Val Pro Ala Asn Thr Glu Asn Glu Val Glu Pro Val
625                 630                 635                 640

Asp Ala Arg Pro Ala Ala Asp Arg Gly Leu Thr Thr Arg Pro Gly Ser
```

```
                645                 650                 655

Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Val Lys Met Asp
            660                 665                 670

Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys Leu
        675                 680                 685

Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile Gly
    690                 695                 700

Leu Met Val Gly Gly Val Val Ile Ala Thr Val Ile Val Ile Thr Leu
705                 710                 715                 720

Val Met Leu Lys Lys Lys Gln Tyr Thr Ser Ile His His Gly Val Val
                725                 730                 735

Glu Val Asp Ala Ala Val Thr Pro Glu Glu Arg His Leu Ser Lys Met
            740                 745                 750

Gln Gln Asn Gly Tyr Glu Asn Pro Thr Tyr Lys Phe Phe Glu Gln Met
        755                 760                 765

Gln Asn
    770
```

<210> 219
<211> 82
<212> PRT
<213> Beta-Amyloid Peptide Precursor (Homo Sapiens)

<400> 219

```
Gly Ser Gly Leu Thr Asn Ile Lys Thr Glu Glu Ile Ser Glu Val Lys
1               5                   10                  15

Met Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln
            20                  25                  30

Lys Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile
        35                  40                  45

Ile Gly Leu Met Val Gly Gly Val Val Ile Ala Thr Val Ile Ile Ile
    50                  55                  60

Thr Leu Val Met Leu Lys Lys Gln Tyr Thr Ser Asn His His Gly Val
65                  70                  75                  80

Val Glu
```

<210> 220
<211> 42
<212> PRT
<213> Amyloid Beta Peptide

<400> 220

```
Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
```

```
1               5                   10                  15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Lys Gly Ala Ile Ile
            20                  25                  30

Gly Leu Met Val Gly Gly Val Val Ile Ala
        35                  40


<210>  221
<211>  249
<212>  PRT
<213>  Homo sapiens

<400>  221

Tyr Phe Arg Ala Gln Met Asp Pro Asn Arg Ile Ser Glu Asp Gly Thr
1               5                   10                  15

His Cys Ile Tyr Arg Ile Leu Arg Leu His Glu Asn Ala Asp Phe Gln
            20                  25                  30

Asp Thr Thr Leu Glu Ser Gln Asp Thr Lys Leu Ile Pro Asp Ser Cys
        35                  40                  45

Arg Arg Ile Lys Gln Ala Phe Gln Gly Ala Val Gln Lys Glu Leu Gln
    50                  55                  60

His Ile Val Gly Ser Gln His Ile Arg Ala Glu Lys Ala Met Val Asp
65                  70                  75                  80

Gly Ser Trp Leu Asp Leu Ala Lys Arg Ser Lys Leu Glu Ala Gln Pro
                85                  90                  95

Phe Ala His Leu Thr Ile Asn Ala Thr Asp Ile Pro Ser Gly Ser His
            100                 105                 110

Lys Val Ser Leu Ser Ser Trp Tyr His Asp Arg Gly Trp Ala Lys Ile
        115                 120                 125

Ser Asn Met Thr Phe Ser Asn Gly Lys Leu Ile Val Asn Gln Asp Gly
    130                 135                 140

Phe Tyr Tyr Leu Tyr Ala Asn Ile Cys Phe Arg His His Glu Thr Ser
145                 150                 155                 160

Gly Asp Leu Ala Thr Glu Tyr Leu Gln Leu Met Val Tyr Val Thr Lys
                165                 170                 175

Thr Ser Ile Lys Ile Pro Ser Ser His Thr Leu Met Lys Gly Gly Ser
```

```
            180                 185                 190

Thr Lys Tyr Trp Ser Gly Asn Ser Glu Phe His Phe Tyr Ser Ile Asn
        195                 200                 205

Val Gly Gly Phe Phe Lys Leu Arg Ser Gly Glu Glu Ile Ser Ile Glu
    210                 215                 220

Val Ser Asn Pro Ser Leu Leu Asp Pro Asp Gln Asp Ala Thr Tyr Phe
225                 230                 235                 240

Gly Ala Phe Lys Val Arg Asp Ile Asp
                245
```

<210> 222
<211> 244
<212> PRT
<213> Homo sapiens

<400> 222

```
Met Asp Pro Asn Arg Ile Ser Glu Asp Gly Thr His Cys Ile Tyr Arg
1               5                   10                  15

Ile Leu Arg Leu His Glu Asn Ala Asp Phe Gln Asp Thr Thr Leu Glu
            20                  25                  30

Ser Gln Asp Thr Lys Leu Ile Pro Asp Ser Cys Arg Arg Ile Lys Gln
        35                  40                  45

Ala Phe Gln Gly Ala Val Gln Lys Glu Leu Gln His Ile Val Gly Ser
    50                  55                  60

Gln His Ile Arg Ala Glu Lys Ala Met Val Asp Gly Ser Trp Leu Asp
65                  70                  75                  80

Leu Ala Lys Arg Ser Lys Leu Glu Ala Gln Pro Phe Ala His Leu Thr
                85                  90                  95

Ile Asn Ala Thr Asp Ile Pro Ser Gly Ser His Lys Val Ser Leu Ser
            100                 105                 110

Ser Trp Tyr His Asp Arg Gly Trp Ala Lys Ile Ser Asn Met Thr Phe
        115                 120                 125

Ser Asn Gly Lys Leu Ile Val Asn Gln Asp Gly Phe Tyr Tyr Leu Tyr
    130                 135                 140
```

```
Ala Asn Ile Cys Phe Arg His His Glu Thr Ser Gly Asp Leu Ala Thr
145                 150                 155                 160

Glu Tyr Leu Gln Leu Met Val Tyr Val Thr Lys Thr Ser Ile Lys Ile
                165                 170                 175

Pro Ser Ser His Thr Leu Met Lys Gly Gly Ser Thr Lys Tyr Trp Ser
            180                 185                 190

Gly Asn Ser Glu Phe His Phe Tyr Ser Ile Asn Val Gly Gly Phe Phe
        195                 200                 205

Lys Leu Arg Ser Gly Glu Glu Ile Ser Ile Glu Val Ser Asn Pro Ser
    210                 215                 220

Leu Leu Asp Pro Asp Gln Asp Ala Thr Tyr Phe Gly Ala Phe Lys Val
225                 230                 235                 240

Arg Asp Ile Asp
```

<210> 223
<211> 247
<212> PRT
<213> Mus musculus

<400> 223

```
Tyr Phe Arg Ala Gln Met Asp Pro Asn Arg Ile Ser Glu Asp Ser Thr
1               5                   10                  15

His Cys Phe Tyr Arg Ile Leu Arg Leu His Glu Asn Ala Gly Leu Gln
            20                  25                  30

Asp Ser Thr Leu Glu Ser Glu Asp Thr Leu Pro Asp Ser Cys Arg Arg
        35                  40                  45

Met Lys Gln Ala Phe Gln Gly Ala Val Gln Lys Glu Leu Gln His Ile
    50                  55                  60

Val Gly Pro Gln Arg Phe Ser Gly Ala Pro Ala Met Met Glu Gly Ser
65                  70                  75                  80

Trp Leu Asp Val Ala Gln Arg Gly Lys Pro Glu Ala Gln Pro Phe Ala
                85                  90                  95

His Leu Thr Ile Asn Ala Ala Ser Ile Pro Ser Gly Ser His Lys Val
```

```
            100                 105                 110

Thr Leu Ser Ser Trp Tyr His Asp Arg Gly Trp Ala Lys Ile Ser Asn
        115                 120                 125

Met Thr Leu Ser Asn Gly Lys Leu Arg Val Asn Gln Asp Gly Phe Tyr
    130                 135                 140

Tyr Leu Tyr Ala Asn Ile Cys Phe Arg His His Glu Thr Ser Gly Ser
145                 150                 155                 160

Val Pro Thr Asp Tyr Leu Gln Leu Met Val Tyr Val Val Lys Thr Ser
                165                 170                 175

Ile Lys Ile Pro Ser Ser His Asn Leu Met Lys Gly Gly Ser Thr Lys
            180                 185                 190

Asn Trp Ser Gly Asn Ser Glu Phe His Phe Tyr Ser Ile Asn Val Gly
        195                 200                 205

Gly Phe Phe Lys Leu Arg Ala Gly Glu Glu Ile Ser Ile Gln Val Ser
    210                 215                 220

Asn Pro Ser Leu Leu Asp Pro Asp Gln Asp Ala Thr Tyr Phe Gly Ala
225                 230                 235                 240

Phe Lys Val Gln Asp Ile Asp
                245
```

<210> 224
<211> 199
<212> PRT
<213> Mus musculus

<400> 224

```
Met Lys Gln Ala Phe Gln Gly Ala Val Gln Lys Glu Leu Gln His Ile
1               5                   10                  15

Val Gly Pro Gln Arg Phe Ser Gly Ala Pro Ala Met Met Glu Gly Ser
            20                  25                  30

Trp Leu Asp Val Ala Gln Arg Gly Lys Pro Glu Ala Gln Pro Phe Ala
        35                  40                  45

His Leu Thr Ile Asn Ala Ala Ser Ile Pro Ser Gly Ser His Lys Val
    50                  55                  60
```

```
Thr Leu Ser Ser Trp Tyr His Asp Arg Gly Trp Ala Lys Ile Ser Asn
65                  70                  75                  80

Met Thr Leu Ser Asn Gly Lys Leu Arg Val Asn Gln Asp Gly Phe Tyr
                85                  90                  95

Tyr Leu Tyr Ala Asn Ile Cys Phe Arg His His Glu Thr Ser Gly Ser
            100                 105                 110

Val Pro Thr Asp Tyr Leu Gln Leu Met Val Tyr Val Val Lys Thr Ser
        115                 120                 125

Ile Lys Ile Pro Ser Ser His Asn Leu Met Lys Gly Gly Ser Thr Lys
    130                 135                 140

Asn Trp Ser Gly Asn Ser Glu Phe His Phe Tyr Ser Ile Asn Val Gly
145                 150                 155                 160

Gly Phe Phe Lys Leu Arg Ala Gly Glu Glu Ile Ser Ile Gln Val Ser
                165                 170                 175

Asn Pro Ser Leu Leu Asp Pro Asp Gln Asp Ala Thr Tyr Phe Gly Ala
            180                 185                 190

Phe Lys Val Gln Asp Ile Asp
        195
```

<210> 225
<211> 114
<212> PRT
<213> Rattus sp.

<400> 225

```
Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro Glu
1               5                   10                  15

Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly Lys
            20                  25                  30

Pro Ala Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met Thr
        35                  40                  45

Phe Ser Gly Thr Ser Asp Pro Cys Ala Leu Cys Ser Leu His Ser Ile
    50                  55                  60

Gly Lys Ile Gly Gly Ala Gln Asn Arg Asn Tyr Ser Lys Leu Leu Cys
```

65 70 75 80

Gly Leu Leu Ser Asp Arg Leu His Ile Ser Pro Asp Arg Val Tyr Ile
85 90 95

Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Gly Ser Thr
100 105 110

Phe Ala

<210> 226
<211> 114
<212> PRT
<213> Mus musculus

<400> 226

Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro Glu
1 5 10 15

Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly Lys
20 25 30

Pro Ala Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met Thr
35 40 45

Phe Ser Gly Thr Asn Asp Pro Cys Ala Leu Cys Ser Leu His Ser Ile
50 55 60

Gly Lys Ile Gly Gly Ala Gln Asn Arg Asn Tyr Ser Lys Leu Leu Cys
65 70 75 80

Gly Leu Leu Ser Asp Arg Leu His Ile Ser Pro Asp Arg Val Tyr Ile
85 90 95

Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Gly Ser Thr
100 105 110

Phe Ala

<210> 227
<211> 114
<212> PRT
<213> Homo sapiens

<400> 227

```
Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro Asp
1               5                   10                  15

Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly Lys
            20                  25                  30

Pro Pro Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met Ala
        35                  40                  45

Phe Gly Gly Ser Ser Glu Pro Cys Ala Leu Cys Ser Leu His Ser Ile
    50                  55                  60

Gly Lys Ile Gly Gly Ala Gln Asn Arg Ser Tyr Ser Lys Leu Leu Cys
65                  70                  75                  80

Gly Leu Leu Ala Glu Arg Leu Arg Ile Ser Pro Asp Arg Val Tyr Ile
                85                  90                  95

Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Asn Ser Thr
            100                 105                 110

Phe Ala
```

<210> 228
<211> 155
<212> PRT
<213> Homo sapiens

<400> 228

```
Met Thr Pro Gly Lys Thr Ser Leu Val Ser Leu Leu Leu Leu Leu Ser
1               5                   10                  15

Leu Glu Ala Ile Val Lys Ala Gly Ile Thr Ile Pro Arg Asn Pro Gly
            20                  25                  30

Cys Pro Asn Ser Glu Asp Lys Asn Phe Pro Arg Thr Val Met Val Asn
        35                  40                  45

Leu Asn Ile His Asn Arg Asn Thr Asn Thr Asn Pro Lys Arg Ser Ser
    50                  55                  60

Asp Tyr Tyr Asn Arg Ser Thr Ser Pro Trp Asn Leu His Arg Asn Glu
65                  70                  75                  80

Asp Pro Glu Arg Tyr Pro Ser Val Ile Trp Glu Ala Lys Cys Arg His
                85                  90                  95
```

```
Leu Gly Cys Ile Asn Ala Asp Gly Asn Val Asp Tyr His Met Asn Ser
            100                 105                 110

Val Pro Ile Gln Gln Glu Ile Leu Val Leu Arg Arg Glu Pro Pro His
        115                 120                 125

Cys Pro Asn Ser Phe Arg Leu Glu Lys Ile Leu Val Ser Val Gly Cys
    130                 135                 140

Thr Cys Val Thr Pro Ile Val His His Val Ala
145                 150                 155
```

<210> 229
<211> 158
<212> PRT
<213> Mus musculus

<400> 229

```
Met Ser Pro Gly Arg Ala Ser Ser Val Ser Leu Met Leu Leu Leu Leu
1               5                   10                  15

Leu Ser Leu Ala Ala Thr Val Lys Ala Ala Ala Ile Ile Pro Gln Ser
            20                  25                  30

Ser Ala Cys Pro Asn Thr Glu Ala Lys Asp Phe Leu Gln Asn Val Lys
        35                  40                  45

Val Asn Leu Lys Val Phe Asn Ser Leu Gly Ala Lys Val Ser Ser Arg
    50                  55                  60

Arg Pro Ser Asp Tyr Leu Asn Arg Ser Thr Ser Pro Trp Thr Leu His
65                  70                  75                  80

Arg Asn Glu Asp Pro Asp Arg Tyr Pro Ser Val Ile Trp Glu Ala Gln
                85                  90                  95

Cys Arg His Gln Arg Cys Val Asn Ala Glu Gly Lys Leu Asp His His
            100                 105                 110

Met Asn Ser Val Leu Ile Gln Gln Glu Ile Leu Val Leu Lys Arg Glu
        115                 120                 125

Pro Glu Ser Cys Pro Phe Thr Phe Arg Val Glu Lys Met Leu Val Gly
    130                 135                 140
```

```
Val Gly Cys Thr Cys Val Ala Ser Ile Val Arg Gln Ala Ala
145                 150                 155


<210>  230
<211>  132
<212>  PRT
<213>  Homo sapiens

<400>  230

Met Ala Leu Leu Leu Thr Thr Val Ile Ala Leu Thr Cys Leu Gly Gly
1               5                   10                  15


Phe Ala Ser Pro Gly Pro Val Pro Pro Ser Thr Ala Leu Arg Glu Leu
            20                  25                  30


Ile Glu Glu Leu Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys
        35                  40                  45


Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys
    50                  55                  60


Ala Ala Leu Glu Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu
65                  70                  75                  80


Lys Thr Gln Arg Met Leu Ser Gly Phe Cys Pro His Lys Val Ser Ala
                85                  90                  95


Gly Gln Phe Ser Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala
            100                 105                 110


Gln Phe Val Lys Asp Leu Leu Leu His Leu Lys Lys Leu Phe Arg Glu
        115                 120                 125


Gly Arg Phe Asn
    130


<210>  231
<211>  112
<212>  PRT
<213>  Homo sapiens

<400>  231

Gly Pro Val Pro Pro Ser Thr Ala Leu Arg Glu Leu Ile Glu Glu Leu
1               5                   10                  15


Val Asn Ile Thr Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met
            20                  25                  30
```

Val Trp Ser Ile Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Glu
35 40 45

Ser Leu Ile Asn Val Ser Gly Cys Ser Ala Ile Glu Lys Thr Gln Arg
50 55 60

Met Leu Ser Gly Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser
65 70 75 80

Ser Leu His Val Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys
85 90 95

Asp Leu Leu Leu His Leu Lys Lys Leu Phe Arg Glu Gly Arg Phe Asn
100 105 110

<210> 232
<211> 111
<212> PRT
<213> Mus musculus

<400> 232

Gly Pro Val Pro Arg Ser Val Ser Leu Pro Leu Thr Leu Lys Glu Leu
1 5 10 15

Ile Glu Glu Leu Ser Asn Ile Thr Gln Asp Gln Thr Pro Leu Cys Asn
20 25 30

Gly Ser Met Val Trp Ser Val Asp Leu Ala Ala Gly Gly Phe Cys Val
35 40 45

Ala Leu Asp Ser Leu Thr Asn Ile Ser Asn Cys Asn Ala Ile Tyr Arg
50 55 60

Thr Gln Arg Ile Leu His Gly Leu Cys Asn Arg Lys Ala Pro Thr Thr
65 70 75 80

Val Ser Ser Leu Pro Asp Thr Lys Ile Glu Val Ala His Phe Ile Thr
85 90 95

Lys Leu Leu Ser Tyr Thr Lys Gln Leu Phe Arg His Gly Pro Phe
100 105 110

<210> 233
<211> 134
<212> PRT
<213> Homo sapiens

<400> 233

Met Arg Met Leu Leu His Leu Ser Leu Leu Ala Leu Gly Ala Ala Tyr
1 5 10 15

Val Tyr Ala Ile Pro Thr Glu Ile Pro Thr Ser Ala Leu Val Lys Glu
20 25 30

Thr Leu Ala Leu Leu Ser Thr His Arg Thr Leu Leu Ile Ala Asn Glu
35 40 45

Thr Leu Arg Ile Pro Val Pro Val His Lys Asn His Gln Leu Cys Thr
50 55 60

Glu Glu Ile Phe Gln Gly Ile Gly Thr Leu Glu Ser Gln Thr Val Gln
65 70 75 80

Gly Gly Thr Val Glu Arg Leu Phe Lys Asn Leu Ser Leu Ile Lys Lys
85 90 95

Tyr Ile Asp Gly Gln Lys Lys Lys Cys Gly Glu Glu Arg Arg Arg Val
100 105 110

Asn Gln Phe Leu Asp Tyr Leu Gln Glu Phe Leu Gly Val Met Asn Thr
115 120 125

Glu Trp Ile Ile Glu Ser
130

<210> 234
<211> 115
<212> PRT
<213> Homo sapiens

<400> 234

Ile Pro Thr Glu Ile Pro Thr Ser Ala Leu Val Lys Glu Thr Leu Ala
1 5 10 15

Leu Leu Ser Thr His Arg Thr Leu Leu Ile Ala Asn Glu Thr Leu Arg
20 25 30

Ile Pro Val Pro Val His Lys Asn His Gln Leu Cys Thr Glu Glu Ile
35 40 45

Phe Gln Gly Ile Gly Thr Leu Glu Ser Gln Thr Val Gln Gly Gly Thr
50 55 60

```
Val Glu Arg Leu Phe Lys Asn Leu Ser Leu Ile Lys Lys Tyr Ile Asp
65                  70                  75                  80

Gly Gln Lys Lys Lys Cys Gly Glu Glu Arg Arg Arg Val Asn Gln Phe
                85                  90                  95

Leu Asp Tyr Leu Gln Glu Phe Leu Gly Val Met Asn Thr Glu Trp Ile
            100                 105                 110

Ile Glu Ser
        115
```

<210> 235
<211> 113
<212> PRT
<213> Mus musculus

<400> 235

```
Met Glu Ile Pro Met Ser Thr Val Val Lys Glu Thr Leu Thr Gln Leu
1               5                   10                  15

Ser Ala His Arg Ala Leu Leu Thr Ser Asn Glu Thr Met Arg Leu Pro
            20                  25                  30

Val Pro Thr His Lys Asn His Gln Leu Cys Ile Gly Glu Ile Phe Gln
        35                  40                  45

Gly Leu Asp Ile Leu Lys Asn Gln Thr Val Arg Gly Gly Thr Val Glu
    50                  55                  60

Met Leu Phe Gln Asn Leu Ser Leu Ile Lys Lys Tyr Ile Asp Arg Gln
65                  70                  75                  80

Lys Glu Lys Cys Gly Glu Glu Arg Arg Arg Thr Arg Gln Phe Leu Asp
                85                  90                  95

Tyr Leu Gln Glu Phe Leu Gly Val Met Ser Thr Glu Trp Ala Met Glu
            100                 105                 110

Gly
```

<210> 236
<211> 111
<212> PRT
<213> Homo sapiens

<400> 236

```
Ser Asp Gly Gly Ala Gln Asp Cys Cys Leu Lys Tyr Ser Gln Arg Lys
1               5                   10                  15

Ile Pro Ala Lys Val Val Arg Ser Tyr Arg Lys Gln Glu Pro Ser Leu
            20                  25                  30

Gly Cys Ser Ile Pro Ala Ile Leu Phe Leu Pro Arg Lys Arg Ser Gln
        35                  40                  45

Ala Glu Leu Cys Ala Asp Pro Lys Glu Leu Trp Val Gln Gln Leu Met
    50                  55                  60

Gln His Leu Asp Lys Thr Pro Ser Pro Gln Lys Pro Ala Gln Gly Cys
65                  70                  75                  80

Arg Lys Asp Arg Gly Ala Ser Lys Thr Gly Lys Lys Gly Lys Gly Ser
                85                  90                  95

Lys Gly Cys Lys Arg Thr Glu Arg Ser Gln Thr Pro Lys Gly Pro
            100                 105                 110
```

<210> 237
<211> 110
<212> PRT
<213> Mus musculus

<400> 237

```
Ser Asp Gly Gly Gly Gln Asp Cys Cys Leu Lys Tyr Ser Gln Lys Lys
1               5                   10                  15

Ile Pro Tyr Ser Ile Val Arg Gly Tyr Arg Lys Gln Glu Pro Ser Leu
            20                  25                  30

Gly Cys Pro Ile Pro Ala Ile Leu Phe Ser Pro Arg Lys His Ser Lys
        35                  40                  45

Pro Glu Leu Cys Ala Asn Pro Glu Glu Gly Trp Val Gln Asn Leu Met
    50                  55                  60

Arg Arg Leu Asp Gln Pro Pro Ala Pro Gly Lys Gln Ser Pro Gly Cys
65                  70                  75                  80

Arg Lys Asn Arg Gly Thr Ser Lys Ser Gly Lys Lys Gly Lys Gly Ser
                85                  90                  95

Lys Gly Cys Lys Arg Thr Glu Gln Thr Gln Pro Ser Arg Gly
```

100 105 110

<210> 238
<211> 74
<212> PRT
<213> Homo sapiens

<400> 238

Asp Gly Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys Arg Phe Phe
1 5 10 15

Glu Ser His Val Ala Arg Ala Asn Val Lys His Leu Lys Ile Leu Asn
20 25 30

Thr Pro Asn Cys Ala Leu Gln Ile Val Ala Arg Leu Lys Asn Asn Asn
35 40 45

Arg Gln Val Cys Ile Asp Pro Lys Leu Lys Trp Ile Gln Glu Tyr Leu
50 55 60

Glu Lys Ala Leu Asn Lys Arg Phe Lys Met
65 70

<210> 239
<211> 70
<212> PRT
<213> Mus musculus

<400> 239

Asp Gly Lys Pro Val Ser Leu Ser Tyr Arg Cys Pro Cys Arg Phe Phe
1 5 10 15

Glu Ser His Ile Ala Arg Ala Asn Val Lys His Leu Lys Ile Leu Asn
20 25 30

Thr Pro Asn Cys Ala Leu Gln Ile Val Ala Arg Leu Lys Asn Asn Asn
35 40 45

Arg Gln Val Cys Ile Asp Pro Lys Leu Lys Trp Ile Gln Glu Tyr Leu
50 55 60

Glu Lys Ala Leu Asn Lys
65 70

<210> 240
<211> 109
<212> PRT
<213> Homo sapiens

<400> 240

Met Lys Phe Ile Ser Thr Ser Leu Leu Leu Met Leu Leu Val Ser Ser
1 5 10 15

Leu Ser Pro Val Gln Gly Val Leu Glu Val Tyr Tyr Thr Ser Leu Arg
20 25 30

Cys Arg Cys Val Gln Glu Ser Ser Val Phe Ile Pro Arg Arg Phe Ile
35 40 45

Asp Arg Ile Gln Ile Leu Pro Arg Gly Asn Gly Cys Pro Arg Lys Glu
50 55 60

Ile Ile Val Trp Lys Lys Asn Lys Ser Ile Val Cys Val Asp Pro Gln
65 70 75 80

Ala Glu Trp Ile Gln Arg Met Met Glu Val Leu Arg Lys Arg Ser Ser
85 90 95

Ser Thr Leu Pro Val Pro Val Phe Lys Arg Lys Ile Pro
100 105

<210> 241
<211> 109
<212> PRT
<213> Mus musculus

<400> 241

Met Arg Leu Ser Thr Ala Thr Leu Leu Leu Leu Leu Ala Ser Cys Leu
1 5 10 15

Ser Pro Gly His Gly Ile Leu Glu Ala His Tyr Thr Asn Leu Lys Cys
20 25 30

Arg Cys Ser Gly Val Ile Ser Thr Val Val Gly Leu Asn Ile Ile Asp
35 40 45

Arg Ile Gln Val Thr Pro Pro Gly Asn Gly Cys Pro Lys Thr Glu Val
50 55 60

Val Ile Trp Thr Lys Met Lys Lys Val Ile Cys Val Asn Pro Arg Ala
65 70 75 80

Lys Trp Leu Gln Arg Leu Leu Arg His Val Gln Ser Lys Ser Leu Ser
85 90 95

Ser Thr Pro Gln Ala Pro Val Ser Lys Arg Arg Ala Ala
100 105

<210> 242
<211> 97
<212> PRT
<213> Homo sapiens

<400> 242

Met Lys Val Ser Ala Ala Leu Leu Trp Leu Leu Leu Ile Ala Ala Ala
1 5 10 15

Phe Ser Pro Gln Gly Leu Ala Gly Pro Ala Ser Val Pro Thr Thr Cys
20 25 30

Cys Phe Asn Leu Ala Asn Arg Lys Ile Pro Leu Gln Arg Leu Glu Ser
35 40 45

Tyr Arg Arg Ile Thr Ser Gly Lys Cys Pro Gln Lys Ala Val Ile Phe
50 55 60

Lys Thr Lys Leu Ala Lys Asp Ile Cys Ala Asp Pro Lys Lys Lys Trp
65 70 75 80

Val Gln Asp Ser Met Lys Tyr Leu Asp Gln Lys Ser Pro Thr Pro Lys
85 90 95

Pro

<210> 243
<211> 119
<212> PRT
<213> Homo sapiens

<400> 243

Met Ala Gly Leu Met Thr Ile Val Thr Ser Leu Leu Phe Leu Gly Val
1 5 10 15

Cys Ala His His Ile Ile Pro Thr Gly Ser Val Val Ile Pro Ser Pro
20 25 30

Cys Cys Met Phe Phe Val Ser Lys Arg Ile Pro Glu Asn Arg Val Val
35 40 45

Ser Tyr Gln Leu Ser Ser Arg Ser Thr Cys Leu Lys Ala Gly Val Ile
50 55 60

```
Phe Thr Thr Lys Lys Gly Gln Gln Phe Cys Gly Asp Pro Lys Gln Glu
65                  70                  75                  80

Trp Val Gln Arg Tyr Met Lys Asn Leu Asp Ala Lys Gln Lys Lys Ala
                85                  90                  95

Ser Pro Arg Ala Arg Ala Val Ala Val Lys Gly Pro Val Gln Arg Tyr
            100                 105                 110

Pro Gly Asn Gln Thr Thr Cys
        115
```

<210> 244
<211> 94
<212> PRT
<213> Homo sapiens

<400> 244

```
Met Met Gly Leu Ser Leu Ala Ser Ala Val Leu Leu Ala Ser Leu Leu
1               5                   10                  15

Ser Leu His Leu Gly Thr Ala Thr Arg Gly Ser Asp Ile Ser Lys Thr
            20                  25                  30

Cys Cys Phe Gln Tyr Ser His Lys Pro Leu Pro Trp Thr Trp Val Arg
        35                  40                  45

Ser Tyr Glu Phe Thr Ser Asn Ser Cys Ser Gln Arg Ala Val Ile Phe
    50                  55                  60

Thr Thr Lys Arg Gly Lys Lys Val Cys Thr His Pro Arg Lys Lys Trp
65                  70                  75                  80

Val Gln Lys Tyr Ile Ser Leu Leu Lys Thr Pro Lys Gln Leu
                85                  90
```

<210> 245
<211> 97
<212> PRT
<213> Mus musculus

<400> 245

```
 Met Gln Ser Ser Thr Ala Leu Leu Phe Leu Leu Leu Thr Val Thr Ser
  1               5                   10                  15

Phe Thr Ser Gln Val Leu Ala His Pro Gly Ser Ile Pro Thr Ser Cys
```

```
            20                  25                  30

Cys Phe Ile Met Thr Ser Lys Lys Ile Pro Asn Thr Leu Leu Lys Ser
        35                  40                  45

Tyr Lys Arg Ile Thr Asn Asn Arg Cys Thr Leu Lys Ala Ile Val Phe
    50                  55                  60

Lys Thr Arg Leu Gly Lys Glu Ile Cys Ala Asp Pro Lys Lys Lys Trp
65                  70                  75                  80

Val Gln Asp Ala Thr Lys His Leu Asp Gln Lys Leu Gln Thr Pro Lys
                85                  90                  95

Pro
```

<210> 246
<211> 119
<212> PRT
<213> Mus musculus

<400> 246

```
Met Ala Gly Ser Ala Thr Ile Val Ala Gly Leu Leu Leu Leu Val Ala
1               5                   10                  15

Cys Ala Cys Cys Ile Phe Pro Ile Asp Ser Val Thr Ile Pro Ser Ser
            20                  25                  30

Cys Cys Thr Ser Phe Ile Ser Lys Lys Ile Pro Glu Asn Arg Val Val
        35                  40                  45

Ser Tyr Gln Leu Ala Asn Gly Ser Ile Cys Pro Lys Ala Gly Val Ile
    50                  55                  60

Phe Ile Thr Lys Lys Gly His Lys Ile Cys Thr Asp Pro Lys Leu Leu
65                  70                  75                  80

Trp Val Gln Arg His Ile Gln Lys Leu Asp Ala Lys Lys Asn Gln Pro
                85                  90                  95

Ser Lys Gly Ala Lys Ala Val Arg Thr Lys Phe Ala Val Gln Arg Arg
            100                 105                 110

Arg Gly Asn Ser Thr Glu Val
        115
```

<210> 247
<211> 553
<212> PRT
<213> Homo sapiens

<400> 247

```
Met Thr Ala Pro Gly Ala Ala Gly Arg Cys Pro Pro Thr Thr Trp Leu
1               5                  10                  15

Gly Ser Leu Leu Leu Leu Val Cys Leu Leu Ala Ser Arg Ser Ile Thr
            20                  25                  30

Glu Glu Val Ser Glu Tyr Cys Ser His Met Ile Gly Ser Gly His Leu
        35                  40                  45

Gln Ser Leu Gln Arg Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln
    50                  55                  60

Ile Thr Phe Glu Phe Val Asp Gln Glu Gln Leu Lys Asp Pro Val Cys
65                  70                  75                  80

Tyr Leu Lys Lys Ala Phe Leu Leu Val Gln Asp Ile Met Glu Asp Thr
                85                  90                  95

Met Arg Phe Arg Asp Asn Thr Pro Asn Ala Ile Ala Ile Val Gln Leu
            100                 105                 110

Gln Glu Leu Ser Leu Arg Leu Lys Ser Cys Phe Thr Lys Asp Tyr Glu
        115                 120                 125

Glu His Asp Lys Ala Cys Val Arg Thr Phe Tyr Glu Thr Pro Leu Gln
    130                 135                 140

Leu Leu Glu Lys Val Lys Asn Val Phe Asn Glu Thr Lys Asn Leu Leu
145                 150                 155                 160

Asp Lys Asp Trp Asn Ile Phe Ser Lys Asn Cys Asn Asn Ser Phe Ala
                165                 170                 175

Glu Cys Ser Ser Gln Asp Val Val Thr Lys Pro Asp Cys Asn Cys Leu
            180                 185                 190

Tyr Pro Lys Ala Ile Pro Ser Ser Asp Pro Ala Ser Val Ser Pro His
        195                 200                 205

Gln Pro Leu Ala Pro Ser Met Ala Pro Val Ala Gly Leu Thr Trp Glu
```

```
    210                 215                 220

Asp Ser Glu Gly Thr Glu Gly Ser Ser Leu Leu Pro Gly Glu Gln Pro
225                 230                 235                 240

Leu His Thr Val Asp Pro Gly Ser Ala Lys Gln Arg Pro Pro Arg Ser
                245                 250                 255

Thr Cys Gln Ser Phe Glu Pro Pro Glu Thr Pro Val Val Lys Asp Ser
            260                 265                 270

Thr Ile Gly Gly Ser Pro Gln Pro Arg Pro Ser Val Gly Ala Phe Asn
        275                 280                 285

Pro Gly Met Glu Asp Ile Leu Asp Ser Ala Met Gly Thr Asn Trp Val
    290                 295                 300

Pro Glu Glu Ala Ser Gly Glu Ala Ser Glu Ile Pro Val Pro Gln Gly
305                 310                 315                 320

Thr Glu Leu Ser Pro Ser Arg Pro Gly Gly Gly Ser Met Gln Thr Glu
                325                 330                 335

Pro Ala Arg Pro Ser Asn Phe Leu Ser Ala Ser Ser Pro Leu Pro Ala
            340                 345                 350

Ser Ala Lys Gly Gln Gln Pro Ala Asp Val Thr Gly Thr Ala Leu Pro
        355                 360                 365

Arg Val Gly Pro Val Arg Pro Thr Gly Gln Asp Trp Asn His Thr Pro
    370                 375                 380

Gln Lys Thr Asp His Pro Ser Ala Leu Leu Arg Asp Pro Pro Glu Pro
385                 390                 395                 400

Gly Ser Pro Arg Ile Ser Ser Pro Arg Pro Gln Gly Leu Ser Asn Pro
                405                 410                 415

Ser Thr Leu Ser Ala Gln Pro Gln Leu Ser Arg Ser His Ser Ser Gly
            420                 425                 430

Ser Val Leu Pro Leu Gly Glu Leu Glu Gly Arg Arg Ser Thr Arg Asp
        435                 440                 445

Arg Arg Ser Pro Ala Glu Pro Glu Gly Gly Pro Ala Ser Glu Gly Ala
    450                 455                 460
```

```
Ala Arg Pro Leu Pro Arg Phe Asn Ser Val Pro Leu Thr Asp Thr His
465                 470                 475                 480

Glu Arg Gln Ser Glu Gly Ser Ser Ser Pro Gln Leu Gln Glu Ser Val
                485                 490                 495

Phe His Leu Leu Val Pro Ser Val Ile Leu Val Leu Leu Ala Val Gly
            500                 505                 510

Gly Leu Leu Phe Tyr Arg Trp Arg Arg Arg Ser His Gln Glu Pro Gln
        515                 520                 525

Arg Ala Asp Ser Pro Leu Glu Gln Pro Glu Gly Ser Pro Leu Thr Gln
    530                 535                 540

Asp Asp Arg Gln Val Glu Leu Pro Val
545                 550
```

<210> 248
<211> 552
<212> PRT
<213> Mus musculus

<400> 248

```
Met Thr Ala Arg Gly Ala Ala Gly Arg Cys Pro Ser Ser Thr Trp Leu
1               5                   10                  15

Gly Ser Arg Leu Leu Leu Val Cys Leu Leu Met Ser Arg Ser Ile Ala
            20                  25                  30

Lys Glu Val Ser Glu His Cys Ser His Met Ile Gly Asn Gly His Leu
        35                  40                  45

Lys Val Leu Gln Gln Leu Ile Asp Ser Gln Met Glu Thr Ser Cys Gln
    50                  55                  60

Ile Ala Phe Glu Phe Val Asp Gln Glu Gln Leu Asp Asp Pro Val Cys
65                  70                  75                  80

Tyr Leu Lys Lys Ala Phe Phe Leu Val Gln Asp Ile Ile Asp Glu Thr
                85                  90                  95

Met Arg Phe Lys Asp Asn Thr Pro Asn Ala Asn Ala Thr Glu Arg Leu
            100                 105                 110
```

```
Gln Glu Leu Ser Asn Asn Leu Asn Ser Cys Phe Thr Lys Asp Tyr Glu
        115                 120                 125

Glu Gln Asn Lys Ala Cys Val Arg Thr Phe His Glu Thr Pro Leu Gln
    130                 135                 140

Leu Leu Glu Lys Ile Lys Asn Phe Phe Asn Glu Thr Lys Asn Leu Leu
145                 150                 155                 160

Glu Lys Asp Trp Asn Ile Phe Thr Lys Asn Cys Asn Asn Ser Phe Ala
                165                 170                 175

Lys Cys Ser Ser Arg Asp Val Val Thr Lys Pro Asp Cys Asn Cys Leu
            180                 185                 190

Tyr Pro Lys Ala Thr Pro Ser Ser Asp Pro Ala Ser Ala Ser Pro His
        195                 200                 205

Gln Pro Pro Ala Pro Ser Met Ala Pro Leu Ala Gly Leu Ala Trp Asp
    210                 215                 220

Asp Ser Gln Arg Thr Glu Gly Ser Ser Leu Leu Pro Ser Glu Leu Pro
225                 230                 235                 240

Leu Arg Ile Glu Asp Pro Gly Ser Ala Lys Gln Arg Pro Pro Arg Ser
                245                 250                 255

Thr Cys Gln Thr Leu Glu Ser Thr Glu Gln Pro Asn His Gly Asp Arg
            260                 265                 270

Leu Thr Glu Asp Ser Gln Pro His Pro Ser Ala Gly Gly Pro Val Pro
        275                 280                 285

Gly Val Glu Asp Ile Leu Glu Ser Ser Leu Gly Thr Asn Trp Val Leu
    290                 295                 300

Glu Glu Ala Ser Gly Glu Ala Ser Glu Gly Phe Leu Thr Gln Glu Ala
305                 310                 315                 320

Lys Phe Ser Pro Ser Thr Pro Val Gly Gly Ser Ile Gln Ala Glu Thr
                325                 330                 335

Asp Arg Pro Arg Ala Leu Ser Ala Ser Pro Phe Pro Lys Ser Thr Glu
            340                 345                 350

Asp Gln Lys Pro Val Asp Ile Thr Asp Arg Pro Leu Thr Glu Val Asn
```

355 360 365

Pro Met Arg Pro Ile Gly Gln Thr Gln Asn Asn Thr Pro Glu Lys Thr
370 375 380

Asp Gly Thr Ser Thr Leu Arg Glu Asp His Gln Glu Pro Gly Ser Pro
385 390 395 400

His Ile Ala Thr Pro Asn Pro Gln Arg Val Ser Asn Ser Ala Thr Pro
405 410 415

Val Ala Gln Leu Leu Leu Pro Lys Ser His Ser Trp Gly Ile Val Leu
420 425 430

Pro Leu Gly Glu Leu Glu Gly Lys Arg Ser Thr Arg Asp Arg Arg Ser
435 440 445

Pro Ala Glu Leu Glu Gly Gly Ser Ala Ser Glu Gly Ala Ala Arg Pro
450 455 460

Val Ala Arg Phe Asn Ser Ile Pro Leu Thr Asp Thr Gly His Val Glu
465 470 475 480

Gln His Glu Gly Ser Ser Asp Pro Gln Ile Pro Glu Ser Val Phe His
485 490 495

Leu Leu Val Pro Gly Ile Ile Leu Val Leu Leu Thr Val Gly Gly Leu
500 505 510

Leu Phe Tyr Lys Trp Lys Trp Arg Ser His Arg Asp Pro Gln Thr Leu
515 520 525

Asp Ser Ser Val Gly Arg Pro Glu Asp Ser Ser Leu Thr Gln Asp Glu
530 535 540

Asp Arg Gln Val Glu Leu Pro Val
545 550

<210> 249
<211> 108
<212> PRT
<213> Homo sapiens

<400> 249

Met Lys Ala Leu Cys Leu Leu Leu Leu Pro Val Leu Gly Leu Leu Val
1 5 10 15

```
Ser Ser Lys Thr Leu Cys Ser Met Glu Glu Ala Ile Asn Glu Arg Ile
            20                  25                  30

Gln Glu Val Ala Gly Ser Leu Ile Phe Arg Ala Ile Ser Ser Ile Gly
        35                  40                  45

Leu Glu Cys Gln Ser Val Thr Ser Arg Gly Asp Leu Ala Thr Cys Pro
    50                  55                  60

Arg Gly Phe Ala Val Thr Gly Cys Thr Cys Gly Ser Ala Cys Gly Ser
65                  70                  75                  80

Trp Asp Val Arg Ala Glu Thr Thr Cys His Cys Gln Cys Ala Gly Met
                85                  90                  95

Asp Trp Thr Gly Ala Arg Cys Cys Arg Val Gln Pro
            100                 105
```

<210> 250
<211> 114
<212> PRT
<213> Mus musculus

<400> 250

```
Met Lys Asn Leu Ser Phe Pro Leu Leu Phe Leu Phe Phe Leu Val Pro
1               5                   10                  15

Glu Leu Leu Gly Ser Ser Met Pro Leu Cys Pro Ile Asp Glu Ala Ile
            20                  25                  30

Asp Lys Lys Ile Lys Gln Asp Phe Asn Ser Leu Phe Pro Asn Ala Ile
        35                  40                  45

Lys Asn Ile Gly Leu Asn Cys Trp Thr Val Ser Ser Arg Gly Lys Leu
    50                  55                  60

Ala Ser Cys Pro Glu Gly Thr Ala Val Leu Ser Cys Ser Cys Gly Ser
65                  70                  75                  80

Ala Cys Gly Ser Trp Asp Ile Arg Glu Glu Lys Val Cys His Cys Gln
                85                  90                  95

Cys Ala Arg Ile Asp Trp Thr Ala Ala Arg Cys Cys Lys Leu Gln Val
            100                 105                 110

Ala Ser
```

<210> 251
<211> 174
<212> PRT
<213> Homo sapiens

<400> 251

Gln Asp Gln Gly Gly Leu Val Thr Glu Thr Ala Asp Pro Gly Ala Gln
1 5 10 15

Ala Gln Gln Gly Leu Gly Phe Gln Lys Leu Pro Glu Glu Glu Pro Glu
20 25 30

Thr Asp Leu Ser Pro Gly Leu Pro Ala Ala His Leu Ile Gly Ala Pro
35 40 45

Leu Lys Gly Gln Gly Leu Gly Trp Glu Thr Thr Lys Glu Gln Ala Phe
50 55 60

Leu Thr Ser Gly Thr Gln Phe Ser Asp Ala Glu Gly Leu Ala Leu Pro
65 70 75 80

Gln Asp Gly Leu Tyr Tyr Leu Tyr Cys Leu Val Gly Tyr Arg Gly Arg
85 90 95

Ala Pro Pro Gly Gly Gly Asp Pro Gln Gly Arg Ser Val Thr Leu Arg
100 105 110

Ser Ser Leu Tyr Arg Ala Gly Gly Ala Tyr Gly Pro Gly Thr Pro Glu
115 120 125

Leu Leu Leu Glu Gly Ala Glu Thr Val Thr Pro Val Leu Asp Pro Ala
130 135 140

Arg Arg Gln Gly Tyr Gly Pro Leu Trp Tyr Thr Ser Val Gly Phe Gly
145 150 155 160

Gly Leu Val Gln Leu Arg Arg Gly Glu Arg Val Tyr Val Asn
165 170

<210> 252
<211> 258
<212> PRT
<213> Mus musculus

<400> 252

Gln Asp Gln Gly Arg Arg Val Glu Lys Ile Ile Gly Ser Gly Ala Gln

```
1               5                   10                  15

Ala Gln Lys Arg Leu Asp Asp Ser Lys Pro Ser Cys Ile Leu Pro Ser
            20                  25                  30

Pro Ser Ser Leu Ser Glu Thr Pro Asp Pro Arg Leu His Pro Gln Arg
        35                  40                  45

Ser Asn Ala Ser Arg Asn Leu Ala Ser Thr Ser Gln Gly Pro Val Ala
    50                  55                  60

Gln Ser Ser Arg Glu Ala Ser Ala Trp Met Thr Ile Leu Ser Pro Ala
65                  70                  75                  80

Ala Asp Ser Thr Pro Asp Pro Gly Val Gln Gln Leu Pro Lys Gly Glu
                85                  90                  95

Pro Glu Thr Asp Leu Asn Pro Glu Leu Pro Ala Ala His Leu Ile Gly
            100                 105                 110

Ala Trp Met Ser Gly Gln Gly Leu Ser Trp Glu Ala Ser Gln Glu Glu
        115                 120                 125

Ala Phe Leu Arg Ser Gly Ala Gln Phe Ser Pro Thr His Gly Leu Ala
    130                 135                 140

Leu Pro Gln Asp Gly Val Tyr Tyr Leu Tyr Cys His Val Gly Tyr Arg
145                 150                 155                 160

Gly Arg Thr Pro Pro Ala Gly Arg Ser Arg Ala Arg Ser Leu Thr Leu
                165                 170                 175

Arg Ser Ala Leu Tyr Arg Ala Gly Gly Ala Tyr Gly Arg Gly Ser Pro
            180                 185                 190

Glu Leu Leu Leu Glu Gly Ala Glu Thr Val Thr Pro Val Val Asp Pro
        195                 200                 205

Ile Gly Tyr Gly Ser Leu Trp Tyr Thr Ser Val Gly Phe Gly Gly Leu
    210                 215                 220

Ala Gln Leu Arg Ser Gly Glu Arg Val Tyr Val Asn Ile Ser His Pro
225                 230                 235                 240

Asp Met Val Asp Tyr Arg Arg Gly Lys Thr Phe Phe Gly Ala Val Met
                245                 250                 255
```

Val Gly

<210> 253
<211> 128
<212> PRT
<213> RNA-phage PP7

<400> 253

Met Ser Lys Thr Ile Val Leu Ser Val Gly Glu Ala Thr Arg Thr Leu
1 5 10 15

Thr Glu Ile Gln Ser Thr Ala Asp Arg Gln Ile Phe Glu Glu Lys Val
20 25 30

Gly Pro Leu Val Gly Arg Leu Arg Leu Thr Ala Ser Leu Arg Gln Asn
35 40 45

Gly Ala Lys Thr Ala Tyr Arg Val Asn Leu Lys Leu Asp Gln Ala Asp
50 55 60

Val Val Asp Cys Ser Thr Ser Val Cys Gly Glu Leu Pro Lys Val Arg
65 70 75 80

Tyr Thr Gln Val Trp Ser His Asp Val Thr Ile Val Ala Asn Ser Thr
85 90 95

Glu Ala Ser Arg Lys Ser Leu Tyr Asp Leu Thr Lys Ser Leu Val Ala
100 105 110

Thr Ser Gln Val Glu Asp Leu Val Val Asn Leu Val Pro Leu Gly Arg
115 120 125

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<211> 330
<212> PRT
<213> RNA-phage SP A1 protein

<400> 254

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Gln Thr Leu Thr Leu Thr Pro Arg Gly Val Asn Pro Thr Asn Gly Val
20 25 30

Ala Ser Leu Ser Glu Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val

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        35                  40                  45

Thr Val Ser Val Ala Gln Pro Ser Arg Asn Arg Lys Asn Phe Lys Val
    50                  55                  60

Gln Ile Lys Leu Gln Asn Pro Thr Ala Cys Thr Arg Asp Ala Cys Asp
65                  70                  75                  80

Pro Ser Val Thr Arg Ser Ala Phe Ala Asp Val Thr Leu Ser Phe Thr
                85                  90                  95

Ser Tyr Ser Thr Asp Glu Glu Arg Ala Leu Ile Arg Thr Glu Leu Ala
            100                 105                 110

Ala Leu Leu Ala Asp Pro Leu Ile Val Asp Ala Ile Asp Asn Leu Asn
        115                 120                 125

Pro Ala Tyr Trp Ala Ala Leu Leu Val Ala Ser Ser Gly Gly Gly Asp
    130                 135                 140

Asn Pro Ser Asp Pro Asp Val Pro Val Val Pro Asp Val Lys Pro Pro
145                 150                 155                 160

Asp Gly Thr Gly Arg Tyr Lys Cys Pro Phe Ala Cys Tyr Arg Leu Gly
                165                 170                 175

Ser Ile Tyr Glu Val Gly Lys Glu Gly Ser Pro Asp Ile Tyr Glu Arg
            180                 185                 190

Gly Asp Glu Val Ser Val Thr Phe Asp Tyr Ala Leu Glu Asp Phe Leu
        195                 200                 205

Gly Asn Thr Asn Trp Arg Asn Trp Asp Gln Arg Leu Ser Asp Tyr Asp
    210                 215                 220

Ile Ala Asn Arg Arg Arg Cys Arg Gly Asn Gly Tyr Ile Asp Leu Asp
225                 230                 235                 240

Ala Thr Ala Met Gln Ser Asp Asp Phe Val Leu Ser Gly Arg Tyr Gly
                245                 250                 255

Val Arg Lys Val Lys Phe Pro Gly Ala Phe Gly Ser Ile Lys Tyr Leu
            260                 265                 270

Leu Asn Ile Gln Gly Asp Ala Trp Leu Asp Leu Ser Glu Val Thr Ala
        275                 280                 285
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Tyr Arg Ser Tyr Gly Met Val Ile Gly Phe Trp Thr Asp Ser Lys Ser
    290                 295                 300

Pro Gln Leu Pro Thr Asp Phe Thr Gln Phe Asn Ser Ala Asn Cys Pro
305                 310                 315                 320

Val Gln Thr Val Ile Ile Ile Pro Ser Leu
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<210> 255
<211> 132
<212> PRT
<213> QB 240

<400> 255

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Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
            20                  25                  30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
        35                  40                  45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
    50                  55                  60

Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
65                  70                  75                  80

Asp Pro Ser Val Thr Arg Gln Lys Tyr Ala Asp Val Thr Phe Ser Phe
                85                  90                  95

Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
            100                 105                 110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
        115                 120                 125

Asn Pro Ala Tyr
    130
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<210> 256
<211> 132
<212> PRT
<213> Qb 243

<400> 256

Ala Lys Leu Glu Thr Val Thr Leu Gly Lys Ile Gly Lys Asp Gly Lys
1 5 10 15

Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
20 25 30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
35 40 45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
50 55 60

Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
65 70 75 80

Asp Pro Ser Val Thr Arg Gln Lys Tyr Ala Asp Val Thr Phe Ser Phe
85 90 95

Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
100 105 110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
115 120 125

Asn Pro Ala Tyr
130

<210> 257
<211> 132
<212> PRT
<213> Qb 250

<400> 257

Ala Arg Leu Glu Thr Val Thr Leu Gly Asn Ile Gly Arg Asp Gly Lys
1 5 10 15

Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
20 25 30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
35 40 45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
50 55 60

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Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
65                  70                  75                  80

Asp Pro Ser Val Thr Arg Gln Lys Tyr Ala Asp Val Thr Phe Ser Phe
                85                  90                  95

Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
            100                 105                 110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
        115                 120                 125

Asn Pro Ala Tyr
    130
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<210> 258
<211> 132
<212> PRT
<213> Qb 259

<400> 258

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Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
            20                  25                  30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
        35                  40                  45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
    50                  55                  60

Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
65                  70                  75                  80

Asp Pro Ser Val Thr Arg Gln Lys Tyr Ala Asp Val Thr Phe Ser Phe
                85                  90                  95

Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
            100                 105                 110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
        115                 120                 125

Asn Pro Ala Tyr
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130

<210> 259
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<212> PRT
<213> Qb 251

<400> 259

Ala Lys Leu Glu Thr Val Thr Leu Gly Asn Ile Gly Lys Asp Gly Arg
1 5 10 15

Gln Thr Leu Val Leu Asn Pro Arg Gly Val Asn Pro Thr Asn Gly Val
20 25 30

Ala Ser Leu Ser Gln Ala Gly Ala Val Pro Ala Leu Glu Lys Arg Val
35 40 45

Thr Val Ser Val Ser Gln Pro Ser Arg Asn Arg Lys Asn Tyr Lys Val
50 55 60

Gln Val Lys Ile Gln Asn Pro Thr Ala Cys Thr Ala Asn Gly Ser Cys
65 70 75 80

Asp Pro Ser Val Thr Arg Gln Lys Tyr Ala Asp Val Thr Phe Ser Phe
85 90 95

Thr Gln Tyr Ser Thr Asp Glu Glu Arg Ala Phe Val Arg Thr Glu Leu
100 105 110

Ala Ala Leu Leu Ala Ser Pro Leu Leu Ile Asp Ala Ile Asp Gln Leu
115 120 125

Asn Pro Ala Tyr
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<400> 261

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<213> PH21

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<400> 263
gcctctagag aggaagcgac ctgcagctta c 31

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<223> Resistin-C-Xa construct

<400> 280

Ser Ser Met Pro Leu Cys Pro Ile Asp Glu Ala Ile Asp Lys Lys Ile
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Lys Gln Asp Phe Asn Ser Leu Phe Pro Asn Ala Ile Lys Asn Ile Gly
20 25 30

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Leu Asn Cys Trp Thr Val Ser Ser Arg Gly Lys Leu Ala Ser Cys Pro
        35                  40                  45

Glu Gly Thr Ala Val Leu Ser Cys Ser Cys Gly Ser Ala Cys Gly Ser
    50                  55                  60

Trp Asp Ile Arg Glu Glu Lys Val Cys His Cys Gln Cys Ala Arg Ile
65                  70                  75                  80

Asp Trp Thr Ala Ala Arg Cys Cys Lys Leu Gln Val Ala Ser Ser Leu
                85                  90                  95

Ala Gly Gly Gly Gly Cys Gly Ile Glu Gly Arg
            100                 105


<210>  281
<211>  107
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  Resistin-C-EK construct

<400>  281

Ser Ser Met Pro Leu Cys Pro Ile Asp Glu Ala Ile Asp Lys Lys Ile
1               5                   10                  15

Lys Gln Asp Phe Asn Ser Leu Phe Pro Asn Ala Ile Lys Asn Ile Gly
            20                  25                  30

Leu Asn Cys Trp Thr Val Ser Ser Arg Gly Lys Leu Ala Ser Cys Pro
        35                  40                  45

Glu Gly Thr Ala Val Leu Ser Cys Ser Cys Gly Ser Ala Cys Gly Ser
    50                  55                  60

Trp Asp Ile Arg Glu Glu Lys Val Cys His Cys Gln Cys Ala Arg Ile
65                  70                  75                  80

Asp Trp Thr Ala Ala Arg Cys Cys Lys Leu Gln Val Ala Ser Ser Leu
                85                  90                  95

Ala Gly Gly Gly Gly Cys Gly Asp Asp Asp Asp
            100                 105


<210>  282
<211>  103
<212>  PRT
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<213> Artificial Sequence

<220>
<223> Resistin-GCG construct

<400> 282

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1 5 10 15

Lys Gln Asp Phe Asn Ser Leu Phe Pro Asn Ala Ile Lys Asn Ile Gly
20 25 30

Leu Asn Cys Trp Thr Val Ser Ser Arg Gly Lys Leu Ala Ser Cys Pro
35 40 45

Glu Gly Thr Ala Val Leu Ser Cys Ser Cys Gly Ser Ala Cys Gly Ser
50 55 60

Trp Asp Ile Arg Glu Glu Lys Val Cys His Cys Gln Cys Ala Arg Ile
65 70 75 80

Asp Trp Thr Ala Ala Arg Cys Cys Lys Leu Gln Val Ala Ser Ser Leu
85 90 95

Ala Gly Gly Gly Gly Cys Gly
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aacttgccaa ctgggccctg ttccacatgt gacacggggg gggaccaaac acaaaggggt 180

tctctgactg tagttgacat ccttataaat ggatgtgcac atttgccaac actgagtggc 240

tttcatcctg gagcagactt tgcatgctgt ggactgcaac acaacattgc ctttatgtgt 300

aactcttggc tgaagctctt acaccaatgc tgggggacat gtacctccca ggggcccagg 360

aagactacgg gaggctacac caacgtcaat cagaggggcc tgtgtagcta ccgataagcg 420

gaccctcaag agggcattag caatagtgtt tataaggccc ccttgttaac cctaaacggg 480

tagcatatgc ttcccgggta gtagtatata ctatccagac taaccctaat tcaatagcat 540

atgttaccca acgggaagca tatgctatcg aattagggtt agtaaaaggg tcctaaggaa 600

cagcgatatc tcccacccca tgagctgtca cggttttatt tacatggggt caggattcca 660

cgagggtagt gaaccatttt agtcacaagg gcagtggctg aagatcaagg agcgggcagt 720

gaactctcct gaatcttcgc ctgcttcttc attctccttc gtttagctaa tagaataact 780

gctgagttgt gaacagtaag gtgtatgtga ggtgctcgaa aacaaggttt caggtgacgc 840

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gctgcgccgc gtgcggctgc tggagatggc ggacgcgatg gatatgttct gccaagggtt 6840

ggtttgcgca ttcacagttc tccgcaagaa ttgattggct ccaattcttg gagtggtgaa 6900

tccgttagcg aggccatcca gcctcgcgtc gaactagatg atccgctgtg gaatgtgtgt 6960

cagttagggt gtggaaagtc cccaggctcc ccagcaggca gaagtatgca aagcatgcat 7020

ctcaattagt cagcaaccag gtgtggaaag tccccaggct ccccagcagg cagaagtatg 7080

caaagcatgc atctcaatta gtcagcaacc atagtcccgc ccctaactcc gcccatcccg 7140

cccctaactc cgcccagttc cgcccattct ccgccccatg gctgactaat ttttttttatt 7200

tatgcagagg ccgaggccgc ctcggcctct gagctattcc agaagtagtg aggaggcttt 7260

tttggagggt gaccgccacg accggtgccg ccaccatccc ctgacccacg cccctgaccc 7320

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gacgacgtcc cccgggccgt acgcaccctc gccgccgcgt tcgccgacta ccccgccacg 7440

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gcacgacccg gtccgacggc ggcccacggg tcccaggggg gtcgacctcg aaacttgttt 8040

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ttttttcac tgcattctag ttgtggtttg tccaaactca tcaatgtatc ttatcatgtc 8160

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tcccatagta acgccaatag ggactttcca ttgacgtcaa tgggtggagt atttacggta 8640

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acaaagccct cccagcctcc atcgagaaaa ccatctccaa agccaaaggg cagccccgag 9480

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gctccgtgat gcatgaggct ctgcacaacc actacacgca gaagagcctc tccctgtctc 9780

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gtcgaccatc atcatcatca tcattgagtt tnaacgatcc agacatgata agatacattg 9900

atgagtttgg acaaaccaca actagaatgc agtgaaaaaa atgctttatt tgtgaaattt 9960

gtgatgctat tgctttattt gtaaccatta taagctgcaa taaacaagtt aacaacaaca 10020

attgcattca ttttatgttt caggttcagg gggaggtggg gaggtttttt aaagcaagta 10080

aaacctctac aaatgtggta tggctgatta tgatccggct gcctcgcgcg tttcggtgat 10140

gacggtgaaa acctctgaca catgcagctc ccggagacgg tcacagcttg tctgtaagcg 10200

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gcagccatga ccggtcgact ctaga 10285

<210> 284
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> 5'LT oligonucleotide

<400> 284
cttggtgccg caggatcag 19

<210> 285
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> 3'LT oligonucleotide

<400> 285
cagatggctg tcaccccac 19

<210> 286
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> 5'LT long-NheI oligonucleotide

<400> 286
gcccgctagc ctgcggtggt caggatcagg gacgtcg 37

<210> 287
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> 5'LT short-NheI oligonucleotide

<400> 287
gcccgctagc ctgcggtggt tctccagctg cggattc 37

<210> 288
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> 3'LT stop-NotI oligonucleotide

<400> 288
caatgactgc ggccgcttac cccaccatca ccg 33

<210> 289
<211> 504
<212> PRT
<213> Artificial Sequence

<220>
<223> GST-EK-C-LT-beta-49-306 fusion protein

<400> 289

Ala Pro Leu Val Met Ser Pro Ile Leu Gly Tyr Trp Lys Ile Lys Gly
1 5 10 15

Leu Val Gln Pro Thr Arg Leu Leu Leu Glu Tyr Leu Glu Glu Lys Tyr
20 25 30

Glu Glu His Leu Tyr Glu Arg Asp Glu Gly Asp Lys Trp Arg Asn Lys
35 40 45

Lys Phe Glu Leu Gly Leu Glu Phe Pro Asn Leu Pro Tyr Tyr Ile Asp
50 55 60

Gly Asp Val Lys Leu Thr Gln Ser Met Ala Ile Ile Arg Tyr Ile Ala
65 70 75 80

Asp Lys His Asn Met Leu Gly Gly Cys Pro Lys Glu Arg Ala Glu Ile
85 90 95

```
Ser Met Leu Glu Gly Ala Val Leu Asp Ile Arg Tyr Gly Val Ser Arg
            100                 105                 110

Ile Ala Tyr Ser Lys Asp Phe Glu Thr Leu Lys Val Asp Phe Leu Ser
        115                 120                 125

Lys Leu Pro Glu Met Leu Lys Met Phe Glu Asp Arg Leu Cys His Lys
    130                 135                 140

Thr Tyr Leu Asn Gly Asp His Val Thr His Pro Asp Phe Met Leu Tyr
145                 150                 155                 160

Asp Ala Leu Asp Val Val Leu Tyr Met Asp Pro Met Cys Leu Asp Ala
                165                 170                 175

Phe Pro Lys Leu Val Cys Phe Lys Lys Arg Ile Glu Ala Ile Pro Gln
            180                 185                 190

Ile Asp Lys Tyr Leu Lys Ser Ser Lys Tyr Ile Ala Trp Pro Leu Gln
        195                 200                 205

Gly Trp Gln Ala Thr Phe Gly Gly Gly Asp His Pro Pro Lys Ala Ser
    210                 215                 220

Met Thr Gly Gly Gln Gln Met Gly Arg Asp Leu Tyr Asp Asp Asp Asp
225                 230                 235                 240

Lys Leu Ala Cys Gly Gly Gln Asp Gln Gly Arg Arg Val Glu Lys Ile
                245                 250                 255

Ile Gly Ser Gly Ala Gln Ala Gln Lys Arg Leu Asp Asp Ser Lys Pro
            260                 265                 270

Ser Cys Ile Leu Pro Ser Pro Ser Ser Leu Ser Glu Thr Pro Asp Pro
        275                 280                 285

Arg Leu His Pro Gln Arg Ser Asn Ala Ser Arg Asn Leu Ala Ser Thr
    290                 295                 300

Ser Gln Gly Pro Val Ala Gln Ser Ser Arg Glu Ala Ser Ala Trp Met
305                 310                 315                 320

Thr Ile Leu Ser Pro Ala Ala Asp Ser Thr Pro Asp Pro Gly Val Gln
                325                 330                 335
```

```
Gln Leu Pro Lys Gly Glu Pro Glu Thr Asp Leu Asn Pro Glu Leu Pro
            340                 345                 350

Ala Ala His Leu Ile Gly Ala Trp Met Ser Gly Gln Gly Leu Ser Trp
        355                 360                 365

Glu Ala Ser Gln Glu Glu Ala Phe Leu Arg Ser Gly Ala Gln Phe Ser
    370                 375                 380

Pro Thr His Gly Leu Ala Leu Pro Gln Asp Gly Val Tyr Tyr Leu Tyr
385                 390                 395                 400

Cys His Val Gly Tyr Arg Gly Arg Thr Pro Pro Ala Gly Arg Ser Arg
                405                 410                 415

Ala Arg Ser Leu Thr Leu Arg Ser Ala Leu Tyr Arg Ala Gly Gly Ala
             420                 425                 430

Tyr Gly Arg Gly Ser Pro Glu Leu Leu Leu Glu Gly Ala Glu Thr Val
        435                 440                 445

Thr Pro Val Val Asp Pro Ile Gly Tyr Gly Ser Leu Trp Tyr Thr Ser
    450                 455                 460

Val Gly Phe Gly Gly Leu Ala Gln Leu Arg Ser Gly Glu Arg Val Tyr
465                 470                 475                 480

Val Asn Ile Ser His Pro Asp Met Val Asp Tyr Arg Arg Gly Lys Thr
                485                 490                 495

Phe Phe Gly Ala Val Met Val Gly
            500
```

<210> 290
<211> 427
<212> PRT
<213> Artificial Sequence

<220>
<223> GST-EK-C-LT_126-306 fusion protein

<400> 290

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Ala Pro Leu Val Met Ser Pro Ile Leu Gly Tyr Trp Lys Ile Lys Gly
1               5                   10                  15

Leu Val Gln Pro Thr Arg Leu Leu Leu Glu Tyr Leu Glu Glu Lys Tyr
            20                  25                  30
```

```
Glu Glu His Leu Tyr Glu Arg Asp Glu Gly Asp Lys Trp Arg Asn Lys
        35                  40                  45

Lys Phe Glu Leu Gly Leu Glu Phe Pro Asn Leu Pro Tyr Tyr Ile Asp
    50                  55                  60

Gly Asp Val Lys Leu Thr Gln Ser Met Ala Ile Ile Arg Tyr Ile Ala
65                  70                  75                  80

Asp Lys His Asn Met Leu Gly Gly Cys Pro Lys Glu Arg Ala Glu Ile
                85                  90                  95

Ser Met Leu Glu Gly Ala Val Leu Asp Ile Arg Tyr Gly Val Ser Arg
            100                 105                 110

Ile Ala Tyr Ser Lys Asp Phe Glu Thr Leu Lys Val Asp Phe Leu Ser
        115                 120                 125

Lys Leu Pro Glu Met Leu Lys Met Phe Glu Asp Arg Leu Cys His Lys
    130                 135                 140

Thr Tyr Leu Asn Gly Asp His Val Thr His Pro Asp Phe Met Leu Tyr
145                 150                 155                 160

Asp Ala Leu Asp Val Val Leu Tyr Met Asp Pro Met Cys Leu Asp Ala
                165                 170                 175

Phe Pro Lys Leu Val Cys Phe Lys Lys Arg Ile Glu Ala Ile Pro Gln
            180                 185                 190

Ile Asp Lys Tyr Leu Lys Ser Ser Lys Tyr Ile Ala Trp Pro Leu Gln
        195                 200                 205

Gly Trp Gln Ala Thr Phe Gly Gly Gly Asp His Pro Pro Lys Ala Ser
    210                 215                 220

Met Thr Gly Gly Gln Gln Met Gly Arg Asp Leu Tyr Asp Asp Asp Asp
225                 230                 235                 240

Lys Leu Ala Cys Gly Gly Ser Pro Ala Ala Asp Ser Thr Pro Asp Pro
                245                 250                 255

Gly Val Gln Gln Leu Pro Lys Gly Glu Pro Glu Thr Asp Leu Asn Pro
            260                 265                 270
```

```
Glu Leu Pro Ala Ala His Leu Ile Gly Ala Trp Met Ser Gly Gln Gly
        275                 280                 285

Leu Ser Trp Glu Ala Ser Gln Glu Glu Ala Phe Leu Arg Ser Gly Ala
    290                 295                 300

Gln Phe Ser Pro Thr His Gly Leu Ala Leu Pro Gln Asp Gly Val Tyr
305                 310                 315                 320

Tyr Leu Tyr Cys His Val Gly Tyr Arg Gly Arg Thr Pro Pro Ala Gly
                325                 330                 335

Arg Ser Arg Ala Arg Ser Leu Thr Leu Arg Ser Ala Leu Tyr Arg Ala
            340                 345                 350

Gly Gly Ala Tyr Gly Arg Gly Ser Pro Glu Leu Leu Leu Glu Gly Ala
        355                 360                 365

Glu Thr Val Thr Pro Val Val Asp Pro Ile Gly Tyr Gly Ser Leu Trp
    370                 375                 380

Tyr Thr Ser Val Gly Phe Gly Gly Leu Ala Gln Leu Arg Ser Gly Glu
385                 390                 395                 400

Arg Val Tyr Val Asn Ile Ser His Pro Asp Met Val Asp Tyr Arg Arg
                405                 410                 415

Gly Lys Thr Phe Phe Gly Ala Val Met Val Gly
            420                 425
```

<210> 291
<211> 311
<212> PRT
<213> Artificial Sequence

<220>
<223> his-myc-EK-C-LT_49-306 fusion protein

<400> 291

```
Ala Pro Leu Val His His His His His His Gly Pro Leu Val Asp Val
1               5                   10                  15

Ala Ser Asn Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Ala Ser Met
            20                  25                  30

Thr Gly Gly Gln Gln Met Gly Arg Asp Leu Tyr Asp Asp Asp Asp Lys
        35                  40                  45
```

```
Leu Ala Cys Gly Gly Gln Asp Gln Gly Arg Arg Val Glu Lys Ile Ile
    50                  55                  60

Gly Ser Gly Ala Gln Ala Gln Lys Arg Leu Asp Asp Ser Lys Pro Ser
65                  70                  75                  80

Cys Ile Leu Pro Ser Pro Ser Ser Leu Ser Glu Thr Pro Asp Pro Arg
                85                  90                  95

Leu His Pro Gln Arg Ser Asn Ala Ser Arg Asn Leu Ala Ser Thr Ser
            100                 105                 110

Gln Gly Pro Val Ala Gln Ser Ser Arg Glu Ala Ser Ala Trp Met Thr
        115                 120                 125

Ile Leu Ser Pro Ala Ala Asp Ser Thr Pro Asp Pro Gly Val Gln Gln
    130                 135                 140

Leu Pro Lys Gly Glu Pro Glu Thr Asp Leu Asn Pro Glu Leu Pro Ala
145                 150                 155                 160

Ala His Leu Ile Gly Ala Trp Met Ser Gly Gln Gly Leu Ser Trp Glu
                165                 170                 175

Ala Ser Gln Glu Glu Ala Phe Leu Arg Ser Gly Ala Gln Phe Ser Pro
            180                 185                 190

Thr His Gly Leu Ala Leu Pro Gln Asp Gly Val Tyr Tyr Leu Tyr Cys
        195                 200                 205

His Val Gly Tyr Arg Gly Arg Thr Pro Pro Ala Gly Arg Ser Arg Ala
    210                 215                 220

Arg Ser Leu Thr Leu Arg Ser Ala Leu Tyr Arg Ala Gly Gly Ala Tyr
225                 230                 235                 240

Gly Arg Gly Ser Pro Glu Leu Leu Leu Glu Gly Ala Glu Thr Val Thr
                245                 250                 255

Pro Val Val Asp Pro Ile Gly Tyr Gly Ser Leu Trp Tyr Thr Ser Val
            260                 265                 270

Gly Phe Gly Gly Leu Ala Gln Leu Arg Ser Gly Glu Arg Val Tyr Val
        275                 280                 285
```

```
Asn Ile Ser His Pro Asp Met Val Asp Tyr Arg Arg Gly Lys Thr Phe
    290                 295                 300

Phe Gly Ala Val Met Val Gly
305                 310

<210>  292
<211>  234
<212>  PRT
<213>  Artificial Sequence

<220>
<223>  his-myc-EK-C-LT_126-306 fusion protein

<400>  292

Ala Pro Leu Val His His His His His His Gly Pro Leu Val Asp Val
1               5                   10                  15

Ala Ser Asn Glu Gln Lys Leu Ile Ser Glu Glu Asp Leu Ala Ser Met
            20                  25                  30

Thr Gly Gly Gln Gln Met Gly Arg Asp Leu Tyr Asp Asp Asp Asp Lys
        35                  40                  45

Leu Ala Cys Gly Gly Ser Pro Ala Ala Asp Ser Thr Pro Asp Pro Gly
    50                  55                  60

Val Gln Gln Leu Pro Lys Gly Glu Pro Glu Thr Asp Leu Asn Pro Glu
65                  70                  75                  80

Leu Pro Ala Ala His Leu Ile Gly Ala Trp Met Ser Gly Gln Gly Leu
                85                  90                  95

Ser Trp Glu Ala Ser Gln Glu Glu Ala Phe Leu Arg Ser Gly Ala Gln
            100                 105                 110

Phe Ser Pro Thr His Gly Leu Ala Leu Pro Gln Asp Gly Val Tyr Tyr
        115                 120                 125

Leu Tyr Cys His Val Gly Tyr Arg Gly Arg Thr Pro Pro Ala Gly Arg
     130                 135                 140

Ser Arg Ala Arg Ser Leu Thr Leu Arg Ser Ala Leu Tyr Arg Ala Gly
145                 150                 155                 160

Gly Ala Tyr Gly Arg Gly Ser Pro Glu Leu Leu Leu Glu Gly Ala Glu
                165                 170                 175
```

Thr Val Thr Pro Val Val Asp Pro Ile Gly Tyr Gly Ser Leu Trp Tyr
180 185 190

Thr Ser Val Gly Phe Gly Gly Leu Ala Gln Leu Arg Ser Gly Glu Arg
195 200 205

Val Tyr Val Asn Ile Ser His Pro Asp Met Val Asp Tyr Arg Arg Gly
210 215 220

Lys Thr Phe Phe Gly Ala Val Met Val Gly
225 230

<210> 293
<211> 43
<212> DNA
<213> Artificial Sequence

<220>
<223> MCS-1F primer

<400> 293
tatggatccg gctagcgctc gagggtttaa acggcggccg cat 43

<210> 294
<211> 45
<212> DNA
<213> Artificial Sequence

<220>
<223> MCS-1R primer

<400> 294
tcgaatgcgg ccgccgttta aaccctcgag cgctagccgg atcca 45

<210> 295
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Bamhis6-EK-Nhe-F oligonucleotide

<400> 295
gatccacacc accaccacca ccacggttct ggtgacgacg atgacaaagc gctagccc 58

<210> 296
<211> 58
<212> DNA
<213> Artificial Sequence

<220>
<223> Bamhis6-EK-Nhe-R oligonucleotide

<400> 296
tcgagggcta gcgctttgtc atcgtcgtca ccagaaccgt ggtggtggtg gtggtgtg 58

<210> 297
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> oligo1F-C-glycine-linker

<400> 297
tcgagggtgg tggtggtggt tgcggttaat aagtttaaac gc 42

<210> 298
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> oligo1R-C-glycine-linker

<400> 298
ggccgcgttt aaacttatta accgcaacca ccaccaccac cc 42

<210> 299
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> oligo1F-C-gamma1-linker

<400> 299
tcgaggataa aacccacacc tctccgccgt gtggttaata agtttaaacg c 51

<210> 300
<211> 51
<212> DNA
<213> Artificial Sequence

<220>
<223> oligo1R-C-gamma1-linker

<400> 300
ggccgcgttt aaacttatta accacacggc ggagaggtgt gggttttatc c 51

<210> 301
<211> 36
<212> DNA
<213> Artificial Sequence

<220>
<223> oligo1FA-C-gamma3-linker

<400> 301
tcgagccgaa accgtctacc ccgccgggtt cttctg 36

<210> 302
<211> 38
<212> DNA
<213> Artificial Sequence

<220>
<223> oligo1RA-C-gamma3-linker

<400> 302
caccaccaga agaacccggc ggggtagacg gtttcggc 38

<210> 303
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> oligo2FB-C-gamma3-linker

<400> 303
gtggtgctcc gggtggttgc ggttaataag tttaaacgc 39

<210> 304
<211> 37
<212> DNA
<213> Artificial Sequence

<220>
<223> oligo2RB-C-gamma3-linker

<400> 304
ggccgcgttt aaacttatta accgcaacca cccggag 37

<210> 305
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> rMIF-F oligonucleotide

<400> 305
ggaattccat atgcctatgt tcatcgtgaa cac 33

<210> 306
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> rMIF-Xho-R oligonucleotide

<400> 306

cccgctcgag agcgaaggtg gaaccgttc 29

<210> 307
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> rMIF-C1

<400> 307

Met Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro
1 5 10 15

Glu Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly
20 25 30

Lys Pro Ala Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met
35 40 45

Thr Phe Ser Gly Thr Ser Asp Pro Cys Ala Leu Cys Ser Leu His Ser
50 55 60

Ile Gly Lys Ile Gly Gly Ala Gln Asn Arg Asn Tyr Ser Lys Leu Leu
65 70 75 80

Cys Gly Leu Leu Ser Asp Arg Leu His Ile Ser Pro Asp Arg Val Tyr
85 90 95

Ile Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Gly Ser
100 105 110

Thr Phe Ala Leu Glu Gly Gly Gly Gly Gly Cys Gly
115 120

<210> 308
<211> 127
<212> PRT
<213> Artificial Sequence

<220>
<223> rMIF-C2

<400> 308

Met Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro
1 5 10 15

Glu Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly
20 25 30

```
Lys Pro Ala Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met
        35                  40                  45

Thr Phe Ser Gly Thr Ser Asp Pro Cys Ala Leu Cys Ser Leu His Ser
    50                  55                  60

Ile Gly Lys Ile Gly Gly Ala Gln Asn Arg Asn Tyr Ser Lys Leu Leu
65                  70                  75                  80

Cys Gly Leu Leu Ser Asp Arg Leu His Ile Ser Pro Asp Arg Val Tyr
                85                  90                  95

Ile Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Gly Ser
            100                 105                 110

Thr Phe Ala Leu Glu Asp Lys Thr His Thr Ser Pro Pro Cys Gly
        115                 120                 125
```

<210> 309
<211> 135
<212> PRT
<213> Artificial Sequence

<220>
<223> rMIF-C3

<400> 309

```
Met Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro
1               5                   10                  15

Glu Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly
            20                  25                  30

Lys Pro Ala Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met
        35                  40                  45

Thr Phe Ser Gly Thr Ser Asp Pro Cys Ala Leu Cys Ser Leu His Ser
    50                  55                  60

Ile Gly Lys Ile Gly Gly Ala Gln Asn Arg Asn Tyr Ser Lys Leu Leu
65                  70                  75                  80

Cys Gly Leu Leu Ser Asp Arg Leu His Ile Ser Pro Asp Arg Val Tyr
                85                  90                  95

Ile Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Gly Ser
```

100 105 110

Thr Phe Ala Leu Glu Pro Lys Pro Ser Thr Pro Pro Gly Ser Ser Gly
115 120 125

Gly Ala Pro Gly Gly Cys Gly
130 135

<210> 310
<211> 124
<212> PRT
<213> Homo sapiens

<400> 310

Met Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro
1 5 10 15

Asp Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly
20 25 30

Lys Pro Pro Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met
35 40 45

Ala Phe Gly Gly Ser Ser Glu Pro Cys Ala Leu Cys Ser Leu His Ser
50 55 60

Ile Gly Lys Ile Gly Gly Ala Gln Asn Arg Ser Tyr Ser Lys Leu Leu
65 70 75 80

Cys Gly Leu Leu Ala Glu Arg Leu Arg Ile Ser Pro Asp Arg Val Tyr
85 90 95

Ile Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Asn Ser
100 105 110

Thr Phe Ala Leu Glu Gly Gly Gly Gly Gly Cys Gly
115 120

<210> 311
<211> 123
<212> PRT
<213> Homo sapiens

<400> 311

Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro Asp
1 5 10 15

```
Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly Lys
            20                  25                  30

Pro Pro Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met Ala
        35                  40                  45

Phe Gly Gly Ser Ser Glu Pro Cys Ala Leu Cys Ser Leu His Ser Ile
    50                  55                  60

Gly Lys Ile Gly Gly Ala Gln Asn Arg Ser Tyr Ser Lys Leu Leu Cys
65                  70                  75                  80

Gly Leu Leu Ala Glu Arg Leu Arg Ile Ser Pro Asp Arg Val Tyr Ile
                85                  90                  95

Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Asn Ser Thr
            100                 105                 110

Phe Ala Leu Glu Gly Gly Gly Gly Gly Cys Gly
        115                 120
```

<210> 312
<211> 127
<212> PRT
<213> Homo sapiens

<400> 312

```
Met Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro
1               5                   10                  15

Asp Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly
            20                  25                  30

Lys Pro Pro Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met
        35                  40                  45

Ala Phe Gly Gly Ser Ser Glu Pro Cys Ala Leu Cys Ser Leu His Ser
    50                  55                  60

Ile Gly Lys Ile Gly Gly Ala Gln Asn Arg Ser Tyr Ser Lys Leu Leu
65                  70                  75                  80

Cys Gly Leu Leu Ala Glu Arg Leu Arg Ile Ser Pro Asp Arg Val Tyr
                85                  90                  95

Ile Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Asn Ser
            100                 105                 110
```

Thr Phe Ala Leu Glu Asp Lys Thr His Thr Ser Pro Pro Cys Gly
115 120 125

<210> 313
<211> 126
<212> PRT
<213> Homo sapiens

<400> 313

Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro Asp
1 5 10 15

Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly Lys
20 25 30

Pro Pro Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met Ala
35 40 45

Phe Gly Gly Ser Ser Glu Pro Cys Ala Leu Cys Ser Leu His Ser Ile
50 55 60

Gly Lys Ile Gly Gly Ala Gln Asn Arg Ser Tyr Ser Lys Leu Leu Cys
65 70 75 80

Gly Leu Leu Ala Glu Arg Leu Arg Ile Ser Pro Asp Arg Val Tyr Ile
85 90 95

Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Asn Ser Thr
100 105 110

Phe Ala Leu Glu Asp Lys Thr His Thr Ser Pro Pro Cys Gly
115 120 125

<210> 314
<211> 135
<212> PRT
<213> Homo sapiens

<400> 314

Met Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro
1 5 10 15

Asp Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly
20 25 30

Lys Pro Pro Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met

```
        35                  40                  45

Ala Phe Gly Gly Ser Ser Glu Pro Cys Ala Leu Cys Ser Leu His Ser
    50                  55                  60

Ile Gly Lys Ile Gly Gly Ala Gln Asn Arg Ser Tyr Ser Lys Leu Leu
65                  70                  75                  80

Cys Gly Leu Leu Ala Glu Arg Leu Arg Ile Ser Pro Asp Arg Val Tyr
                85                  90                  95

Ile Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Asn Ser
            100                 105                 110

Thr Phe Ala Leu Glu Pro Lys Pro Ser Thr Pro Pro Gly Ser Ser Gly
        115                 120                 125

Gly Ala Pro Gly Gly Cys Gly
     130                 135
```

<210> 315
<211> 134
<212> PRT
<213> Homo sapiens

<400> 315

```
Pro Met Phe Ile Val Asn Thr Asn Val Pro Arg Ala Ser Val Pro Asp
1               5                   10                  15

Gly Phe Leu Ser Glu Leu Thr Gln Gln Leu Ala Gln Ala Thr Gly Lys
            20                  25                  30

Pro Pro Gln Tyr Ile Ala Val His Val Val Pro Asp Gln Leu Met Ala
        35                  40                  45

Phe Gly Gly Ser Ser Glu Pro Cys Ala Leu Cys Ser Leu His Ser Ile
    50                  55                  60

Gly Lys Ile Gly Gly Ala Gln Asn Arg Ser Tyr Ser Lys Leu Leu Cys
65                  70                  75                  80

Gly Leu Leu Ala Glu Arg Leu Arg Ile Ser Pro Asp Arg Val Tyr Ile
                85                  90                  95

Asn Tyr Tyr Asp Met Asn Ala Ala Asn Val Gly Trp Asn Asn Ser Thr
            100                 105                 110
```

Phe Ala Leu Glu Pro Lys Pro Ser Thr Pro Pro Gly Ser Ser Gly Gly
115 120 125

Ala Pro Gly Gly Cys Gly
130

<210> 316
<211> 62
<212> DNA
<213> Artificial Sequence

<220>
<223> RANKL-UP oligonucleotide

<400> 316
ctgccagggg cccgggtgcg gcggtggcca tcatcaccac catcaccagc gcttctcagg 60

ag 62

<210> 317
<211> 35
<212> DNA
<213> Artificial Sequence

<220>
<223> RANKL-down oligonucleotide

<400> 317
ccgctcgagt tagtctatgt cctgaacttt gaaag 35

<210> 318
<211> 419
<212> PRT
<213> Artificial Sequence

<220>
<223> GST-PS-C-RANKL construct

<400> 318

Met Ser Pro Ile Leu Gly Tyr Trp Lys Ile Lys Gly Leu Val Gln Pro
1 5 10 15

Thr Arg Leu Leu Leu Glu Tyr Leu Glu Glu Lys Tyr Glu Glu His Leu
20 25 30

Tyr Glu Arg Asp Glu Gly Asp Lys Trp Arg Asn Lys Lys Phe Glu Leu
35 40 45

Gly Leu Glu Phe Pro Asn Leu Pro Tyr Tyr Ile Asp Gly Asp Val Lys
50 55 60

```
Leu Thr Gln Ser Met Ala Ile Ile Arg Tyr Ile Ala Asp Lys His Asn
65                  70                  75                  80

Met Leu Gly Gly Cys Pro Lys Glu Arg Ala Glu Ile Ser Met Leu Glu
                85                  90                  95

Gly Ala Val Leu Asp Ile Arg Tyr Gly Val Ser Arg Ile Ala Tyr Ser
            100                 105                 110

Lys Asp Phe Glu Thr Leu Lys Val Asp Phe Leu Ser Lys Leu Pro Glu
        115                 120                 125

Met Leu Lys Met Phe Glu Asp Arg Leu Cys His Lys Thr Tyr Leu Asn
    130                 135                 140

Gly Asp His Val Thr His Pro Asp Phe Met Leu Tyr Asp Ala Leu Asp
145                 150                 155                 160

Val Val Leu Tyr Met Asp Pro Met Cys Leu Asp Ala Phe Pro Lys Leu
                165                 170                 175

Val Cys Phe Lys Lys Arg Ile Glu Ala Ile Pro Gln Ile Asp Lys Tyr
            180                 185                 190

Leu Lys Ser Ser Lys Tyr Ile Ala Trp Pro Leu Gln Gly Trp Gln Ala
        195                 200                 205

Thr Phe Gly Gly Gly Asp His Pro Pro Lys Ser Asp Leu Glu Val Leu
    210                 215                 220

Phe Gln Gly Pro Gly Cys Gly Gly Gly His His His His His His Gln
225                 230                 235                 240

Arg Phe Ser Gly Ala Pro Ala Met Met Glu Gly Ser Trp Leu Asp Val
                245                 250                 255

Ala Gln Arg Gly Lys Pro Glu Ala Gln Pro Phe Ala His Leu Thr Ile
            260                 265                 270

Asn Ala Ala Ser Ile Pro Ser Gly Ser His Lys Val Thr Leu Ser Ser
        275                 280                 285

Trp Tyr His Asp Arg Gly Trp Ala Lys Ile Ser Asn Met Thr Leu Ser
    290                 295                 300

Asn Gly Lys Leu Arg Val Asn Gln Asp Gly Phe Tyr Tyr Leu Tyr Ala
```

305 310 315 320

Asn Ile Cys Phe Arg His His Glu Thr Ser Gly Ser Val Pro Thr Asp
325 330 335

Tyr Leu Gln Leu Met Val Tyr Val Val Lys Thr Ser Ile Lys Ile Pro
340 345 350

Ser Ser His Asn Leu Met Lys Gly Gly Ser Thr Lys Asn Trp Ser Gly
355 360 365

Asn Ser Glu Phe His Phe Tyr Ser Ile Asn Val Gly Gly Phe Phe Lys
370 375 380

Leu Arg Ala Gly Glu Glu Ile Ser Ile Gln Val Ser Asn Pro Ser Leu
385 390 395 400

Leu Asp Pro Asp Gln Asp Ala Thr Tyr Phe Gly Ala Phe Lys Val Gln
405 410 415

Asp Ile Asp

<210> 319
<211> 1269
<212> DNA
<213> Artificial Sequence

<220>
<223> GST-PS-C-RANKL construct

<400> 319
atgtccccta tactaggtta ttggaaaatt aagggccttg tgcaacccac tcgacttctt 60

ttggaatatc ttgaagaaaa atatgaagag catttgtatg agcgcgatga aggtgataaa 120

tggcgaaaca aaaagtttga attgggtttg gagtttccca atcttcctta ttatattgat 180

ggtgatgtta aattaacaca gtctatggcc atcatacgtt atatagctga caagcacaac 240

atgttgggtg gttgtccaaa agagcgtgca gagatttcaa tgcttgaagg agcggttttg 300

gatattagat acggtgtttc gagaattgca tatagtaaag actttgaaac tctcaaagtt 360

gattttctta gcaagctacc tgaaatgctg aaaatgttcg aagatcgttt atgtcataaa 420

acatatttaa atggtgatca tgtaacccat cctgacttca tgttgtatga cgctcttgat 480

gttgttttat acatggaccc aatgtgcctg gatgcgttcc caaaattagt ttgttttaaa 540

aaacgtattg aagctatccc acaaattgat aagtacttga aatccagcaa gtatatagca 600

tggcctttgc agggctggca agccacgttt ggtggtggcg accatcctcc aaaatcggat 660

ctggaagttc tgttccaggg gcccgggtgc ggcggtggcc atcatcacca ccatcaccag 720

cgcttctcag gagctccagc tatgatggaa ggctcatggt tggatgtggc ccagcgaggc 780

aagcctgagg cccagccatt tgcacacctc accatcaatg ctgccagcat cccatcgggt 840

tcccataaag tcactctgtc ctcttggtac cacgatcgag gctgggccaa gatctctaac 900

atgacgttaa gcaacggaaa actaagggtt aaccaagatg gcttctatta cctgtacgcc 960

aacatttgct ttcggcatca tgaaacatcg ggaagcgtac ctacagacta tcttcagctg 1020

atggtgtatg tcgttaaaac cagcatcaaa atcccaagtt ctcataacct gatgaaagga 1080

gggagcacga aaaactggtc gggcaattct gaattccact tttattccat aaatgttggg 1140

ggatttttca agctccgagc tggtgaagaa attagcattc aggtgtccaa cccttccctg 1200

ctggatccgg atcaagatgc gacgtacttt ggggctttca aagttcagga catagactaa 1260

ctcgagcgg 1269

<210> 320
<211> 185
<212> PRT
<213> Homo sapiens

<400> 320

Gly Cys Gly Gly Gly Gln His Ile Arg Ala Glu Lys Ala Met Val Asp
1 5 10 15

Gly Ser Trp Leu Asp Leu Ala Lys Arg Ser Lys Leu Glu Ala Gln Pro
20 25 30

Phe Ala His Leu Thr Ile Asn Ala Thr Asp Ile Pro Ser Gly Ser His
35 40 45

Lys Val Ser Leu Ser Ser Trp Tyr His Asp Arg Gly Trp Ala Lys Ile
50 55 60

Ser Asn Met Thr Phe Ser Asn Gly Lys Leu Ile Val Asn Gln Asp Gly
65 70 75 80

Phe Tyr Tyr Leu Tyr Ala Asn Ile Cys Phe Arg His His Glu Thr Ser
85 90 95

Gly Asp Leu Ala Thr Glu Tyr Leu Gln Leu Met Val Tyr Val Thr Lys
100 105 110

Thr Ser Ile Lys Ile Pro Ser Ser His Thr Leu Met Lys Gly Gly Ser
115 120 125

Thr Lys Tyr Trp Ser Gly Asn Ser Glu Phe His Phe Tyr Ser Ile Asn
130 135 140

Val Gly Gly Phe Phe Lys Leu Arg Ser Gly Glu Glu Ile Ser Ile Glu
145 150 155 160

Val Ser Asn Pro Ser Leu Leu Asp Pro Asp Gln Asp Ala Thr Tyr Phe
165 170 175

Gly Ala Phe Lys Val Arg Asp Ile Asp
180 185

<210> 321
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 5'PrP-BamHI

<400> 321
cgggatccca ccatggtggg gggccttgg 29

<210> 322
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer 3'PrP-NheI

<400> 322
ctagctagcc tggatcttct cccg 24

<210> 323
<211> 350
<212> PRT
<213> Artificial Sequence

<220>
<223> mPrPt-EK-Fc construct

<400> 323

Met Val Gly Gly Leu Gly Gly Tyr Met Leu Gly Ser Ala Met Ser Arg
1 5 10 15

Pro Met Ile His Phe Gly Asn Asp Trp Glu Asp Arg Tyr Tyr Arg Glu
20 25 30

Asn Met Tyr Arg Tyr Pro Asn Gln Val Tyr Tyr Arg Pro Val Asp Gln

```
        35                  40                  45

Tyr Ser Asn Gln Asn Asn Phe Val His Asp Cys Val Asn Ile Thr Ile
    50                  55                  60

Lys Gln His Thr Val Thr Thr Thr Thr Lys Gly Glu Asn Phe Thr Glu
65                  70                  75                  80

Thr Asp Val Lys Met Met Glu Arg Val Val Glu Gln Met Cys Val Thr
                85                  90                  95

Gln Tyr Gln Lys Glu Ser Gln Ala Tyr Tyr Asp Gly Arg Ser Arg Leu
            100                 105                 110

Ala Gly Gly Gly Gly Cys Gly Asp Asp Asp Asp Lys Leu Thr His Thr
        115                 120                 125

Cys Pro Pro Cys Pro Ala Pro Glu Ala Glu Gly Ala Pro Ser Val Phe
    130                 135                 140

Leu Phe Pro Pro Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro
145                 150                 155                 160

Glu Val Thr Cys Val Val Val Asp Val Ser His Glu Asp Pro Glu Val
                165                 170                 175

Lys Phe Asn Trp Tyr Val Asp Gly Val Glu Val His Asn Ala Lys Thr
            180                 185                 190

Lys Pro Arg Glu Glu Gln Tyr Asn Ser Thr Tyr Arg Val Val Ser Val
        195                 200                 205

Leu Thr Val Leu His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
    210                 215                 220

Lys Val Ser Asn Lys Ala Leu Pro Ala Ser Ile Glu Lys Thr Ile Ser
225                 230                 235                 240

Lys Ala Lys Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro
                245                 250                 255

Ser Arg Asp Glu Leu Thr Lys Asn Gln Val Ser Leu Thr Cys Leu Val
            260                 265                 270

Lys Gly Phe Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly
        275                 280                 285
```

```
Gln Pro Glu Asn Asn Tyr Lys Thr Thr Pro Pro Val Leu Asp Ser Asp
    290                 295                 300

Gly Ser Phe Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp
305                 310                 315                 320

Gln Gln Gly Asn Val Phe Ser Cys Ser Val Met His Glu Ala Leu His
                325                 330                 335

Asn His Tyr Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
            340                 345                 350
```

<210> 324
<211> 124
<212> PRT
<213> Artificial Sequence

<220>
<223> mPrPt construct

<400> 324

```
Met Val Gly Gly Leu Gly Gly Tyr Met Leu Gly Ser Ala Met Ser Arg
1               5                   10                  15

Pro Met Ile His Phe Gly Asn Asp Trp Glu Asp Arg Tyr Tyr Arg Glu
            20                  25                  30

Asn Met Tyr Arg Tyr Pro Asn Gln Val Tyr Tyr Arg Pro Val Asp Gln
        35                  40                  45

Tyr Ser Asn Gln Asn Asn Phe Val His Asp Cys Val Asn Ile Thr Ile
    50                  55                  60

Lys Gln His Thr Val Thr Thr Thr Thr Lys Gly Glu Asn Phe Thr Glu
65                  70                  75                  80

Thr Asp Val Lys Met Met Glu Arg Val Val Glu Gln Met Cys Val Thr
                85                  90                  95

Gln Tyr Gln Lys Glu Ser Gln Ala Tyr Tyr Asp Gly Arg Ser Arg Leu
            100                 105                 110

Ala Gly Gly Gly Gly Cys Gly Asp Asp Asp Asp Lys
        115                 120
```

<210> 325

<211> 102
<212> PRT
<213> Artificial Sequence

<220>
<223> human resistin-C-Xa construct

<400> 325

Ser Ser Lys Thr Leu Cys Ser Met Glu Glu Ala Ile Asn Glu Arg Ile
1 5 10 15

Gln Glu Val Ala Gly Ser Leu Ile Phe Arg Ala Ile Ser Ser Ile Gly
20 25 30

Leu Glu Cys Gln Ser Val Thr Ser Arg Gly Asp Leu Ala Thr Cys Pro
35 40 45

Arg Gly Phe Ala Val Thr Gly Cys Thr Cys Gly Ser Ala Cys Gly Ser
50 55 60

Trp Asp Val Arg Ala Glu Thr Thr Cys His Cys Gln Cys Ala Gly Met
65 70 75 80

Asp Trp Thr Gly Ala Arg Cys Cys Arg Val Gln Pro Gly Gly Gly Gly
85 90 95

Cys Gly Ile Glu Gly Arg
100

<210> 326
<211> 103
<212> PRT
<213> Artificial Sequence

<220>
<223> human resistin-C-EK construct

<400> 326

Ser Ser Lys Thr Leu Cys Ser Met Glu Glu Ala Ile Asn Glu Arg Ile
1 5 10 15

Gln Glu Val Ala Gly Ser Leu Ile Phe Arg Ala Ile Ser Ser Ile Gly
20 25 30

Leu Glu Cys Gln Ser Val Thr Ser Arg Gly Asp Leu Ala Thr Cys Pro
35 40 45

Arg Gly Phe Ala Val Thr Gly Cys Thr Cys Gly Ser Ala Cys Gly Ser
50 55 60

```
Trp Asp Val Arg Ala Glu Thr Thr Cys His Cys Gln Cys Ala Gly Met
65                  70                  75                  80

Asp Trp Thr Gly Ala Arg Cys Cys Arg Val Gln Pro Gly Gly Gly Gly
                85                  90                  95

Cys Gly Asp Asp Asp Asp Lys
            100
```

<210> 327
<211> 98
<212> PRT
<213> Artificial Sequence

<220>
<223> human resisitin-C construct

<400> 327

```
Ser Ser Lys Thr Leu Cys Ser Met Glu Glu Ala Ile Asn Glu Arg Ile
1               5                   10                  15

Gln Glu Val Ala Gly Ser Leu Ile Phe Arg Ala Ile Ser Ser Ile Gly
            20                  25                  30

Leu Glu Cys Gln Ser Val Thr Ser Arg Gly Asp Leu Ala Thr Cys Pro
        35                  40                  45

Arg Gly Phe Ala Val Thr Gly Cys Thr Cys Gly Ser Ala Cys Gly Ser
    50                  55                  60

Trp Asp Val Arg Ala Glu Thr Thr Cys His Cys Gln Cys Ala Gly Met
65                  70                  75                  80

Asp Trp Thr Gly Ala Arg Cys Cys Arg Val Gln Pro Gly Gly Gly Gly
                85                  90                  95

Cys Gly
```

<210> 328
<211> 132
<212> PRT
<213> Artificial Sequence

<220>
<223> mouse C-IL-13-F construct

<400> 328

```
Ala Asp Pro Gly Cys Gly Gly Gly Gly Gly Leu Ala Gly Pro Val Pro
1               5                   10                  15

Arg Ser Val Ser Leu Pro Leu Thr Leu Lys Glu Leu Ile Glu Glu Leu
            20                  25                  30

Ser Asn Ile Thr Gln Asp Gln Thr Pro Leu Cys Asn Gly Ser Met Val
        35                  40                  45

Trp Ser Val Asp Leu Ala Ala Gly Gly Phe Cys Val Ala Leu Asp Ser
    50                  55                  60

Leu Thr Asn Ile Ser Asn Cys Asn Ala Ile Tyr Arg Thr Gln Arg Ile
65                  70                  75                  80

Leu His Gly Leu Cys Asn Arg Lys Ala Pro Thr Thr Val Ser Ser Leu
                85                  90                  95

Pro Asp Thr Lys Ile Glu Val Ala His Phe Ile Thr Lys Leu Leu Ser
            100                 105                 110

Tyr Thr Lys Gln Leu Phe Arg His Gly Pro Phe Leu Glu Val Leu Ala
        115                 120                 125

Ile Glu Gly Arg
    130
```

<210> 329
<211> 119
<212> PRT
<213> Artificial Sequence

<220>
<223> mouse C-IL-13-S construct

<400> 329

```
Leu Ala Cys Gly Gly Gly Gly Gly Gly Pro Val Pro Arg Ser Val Ser
1               5                   10                  15

Leu Pro Leu Thr Leu Lys Glu Leu Ile Glu Glu Leu Ser Asn Ile Thr
            20                  25                  30

Gln Asp Gln Thr Pro Leu Cys Asn Gly Ser Met Val Trp Ser Val Asp
        35                  40                  45

Leu Ala Ala Gly Gly Phe Cys Val Ala Leu Asp Ser Leu Thr Asn Ile
    50                  55                  60
```

```
Ser Asn Cys Asn Ala Ile Tyr Arg Thr Gln Arg Ile Leu His Gly Leu
65                  70                  75                  80

Cys Asn Arg Lys Ala Pro Thr Thr Val Ser Ser Leu Pro Asp Thr Lys
                85                  90                  95

Ile Glu Val Ala His Phe Ile Thr Lys Leu Leu Ser Tyr Thr Lys Gln
            100                 105                 110

Leu Phe Arg His Gly Pro Phe
        115
```

<210> 330
<211> 133
<212> PRT
<213> Artificial Sequence

<220>
<223> human C-IL-13-F construct

<400> 330

```
Ala Asp Pro Gly Cys Gly Gly Gly Gly Gly Leu Ala Gly Pro Val Pro
1               5                   10                  15

Pro Ser Thr Ala Leu Arg Glu Leu Ile Glu Glu Leu Val Asn Ile Thr
            20                  25                  30

Gln Asn Gln Lys Ala Pro Leu Cys Asn Gly Ser Met Val Trp Ser Ile
        35                  40                  45

Asn Leu Thr Ala Gly Met Tyr Cys Ala Ala Leu Glu Ser Leu Ile Asn
    50                  55                  60

Val Ser Gly Cys Ser Ala Ile Glu Lys Thr Gln Arg Met Leu Ser Gly
65                  70                  75                  80

Phe Cys Pro His Lys Val Ser Ala Gly Gln Phe Ser Ser Leu His Val
                85                  90                  95

Arg Asp Thr Lys Ile Glu Val Ala Gln Phe Val Lys Asp Leu Leu Leu
            100                 105                 110

His Leu Lys Lys Leu Phe Arg Glu Gly Arg Phe Asn Leu Glu Val Leu
        115                 120                 125

Ala Ile Glu Gly Arg
```

130

<210> 331
<211> 120
<212> PRT
<213> Artificial Sequence

<220>
<223> human C-IL-13-S construct

<400> 331

Leu Ala Cys Gly Gly Gly Gly Gly Gly Pro Val Pro Pro Ser Thr Ala
1 5 10 15

Leu Arg Glu Leu Ile Glu Glu Leu Val Asn Ile Thr Gln Asn Gln Lys
20 25 30

Ala Pro Leu Cys Asn Gly Ser Met Val Trp Ser Ile Asn Leu Thr Ala
35 40 45

Gly Met Tyr Cys Ala Ala Leu Glu Ser Leu Ile Asn Val Ser Gly Cys
50 55 60

Ser Ala Ile Glu Lys Thr Gln Arg Met Leu Ser Gly Phe Cys Pro His
65 70 75 80

Lys Val Ser Ala Gly Gln Phe Ser Ser Leu His Val Arg Asp Thr Lys
85 90 95

Ile Glu Val Ala Gln Phe Val Lys Asp Leu Leu Leu His Leu Lys Lys
100 105 110

Leu Phe Arg Glu Gly Arg Phe Asn
115 120

<210> 332
<211> 136
<212> PRT
<213> Artificial Sequence

<220>
<223> mouse C-IL-5-E construct

<400> 332

Ala Leu Val Gly Cys Gly Gly Pro Lys Pro Ser Thr Pro Pro Gly Ser
1 5 10 15

Ser Gly Gly Ala Pro Ala Ser Met Glu Ile Pro Met Ser Thr Val Val
20 25 30

```
Lys Glu Thr Leu Thr Gln Leu Ser Ala His Arg Ala Leu Leu Thr Ser
        35                  40                  45

Asn Glu Thr Met Arg Leu Pro Val Pro Thr His Lys Asn His Gln Leu
    50                  55                  60

Cys Ile Gly Glu Ile Phe Gln Gly Leu Asp Ile Leu Lys Asn Gln Thr
65                  70                  75                  80

Val Arg Gly Gly Thr Val Glu Met Leu Phe Gln Asn Leu Ser Leu Ile
                85                  90                  95

Lys Lys Tyr Ile Asp Arg Gln Lys Glu Lys Cys Gly Glu Glu Arg Arg
            100                 105                 110

Arg Thr Arg Gln Phe Leu Asp Tyr Leu Gln Glu Phe Leu Gly Val Met
        115                 120                 125

Ser Thr Glu Trp Ala Met Glu Gly
    130                 135
```

<210> 333
<211> 134
<212> PRT
<213> Artificial Sequence

<220>
<223> mouse C-IL-5-F construct

<400> 333

```
Ala Asp Pro Gly Cys Gly Gly Gly Gly Gly Leu Ala Met Glu Ile Pro
1               5                   10                  15

Met Ser Thr Val Val Lys Glu Thr Leu Thr Gln Leu Ser Ala His Arg
            20                  25                  30

Ala Leu Leu Thr Ser Asn Glu Thr Met Arg Leu Pro Val Pro Thr His
        35                  40                  45

Lys Asn His Gln Leu Cys Ile Gly Glu Ile Phe Gln Gly Leu Asp Ile
    50                  55                  60

Leu Lys Asn Gln Thr Val Arg Gly Gly Thr Val Glu Met Leu Phe Gln
65                  70                  75                  80

Asn Leu Ser Leu Ile Lys Lys Tyr Ile Asp Arg Gln Lys Glu Lys Cys
```

```
                85                  90                  95

Gly Glu Glu Arg Arg Arg Thr Arg Gln Phe Leu Asp Tyr Leu Gln Glu
            100                 105                 110

Phe Leu Gly Val Met Ser Thr Glu Trp Ala Met Glu Gly Leu Glu Val
        115                 120                 125

Leu Ala Ile Glu Gly Arg
    130
```

<210> 334
<211> 121
<212> PRT
<213> Artificial Sequence

<220>
<223> mouse C-IL-5-S construct

<400> 334

```
Leu Ala Cys Gly Gly Gly Gly Gly Met Glu Ile Pro Met Ser Thr Val
1               5                   10                  15

Val Lys Glu Thr Leu Thr Gln Leu Ser Ala His Arg Ala Leu Leu Thr
            20                  25                  30

Ser Asn Glu Thr Met Arg Leu Pro Val Pro Thr His Lys Asn His Gln
        35                  40                  45

Leu Cys Ile Gly Glu Ile Phe Gln Gly Leu Asp Ile Leu Lys Asn Gln
    50                  55                  60

Thr Val Arg Gly Gly Thr Val Glu Met Leu Phe Gln Asn Leu Ser Leu
65                  70                  75                  80

Ile Lys Lys Tyr Ile Asp Arg Gln Lys Glu Lys Cys Gly Glu Glu Arg
                85                  90                  95

Arg Arg Thr Arg Gln Phe Leu Asp Tyr Leu Gln Glu Phe Leu Gly Val
            100                 105                 110

Met Ser Thr Glu Trp Ala Met Glu Gly
        115                 120
```

<210> 335
<211> 138
<212> PRT
<213> Artificial Sequence

<220>
<223> human C-IL-5-E construct

<400> 335

Ala Leu Val Gly Cys Gly Gly Pro Lys Pro Ser Thr Pro Pro Gly Ser
1 5 10 15

Ser Gly Gly Ala Pro Ala Ser Ile Pro Thr Glu Ile Pro Thr Ser Ala
20 25 30

Leu Val Lys Glu Thr Leu Ala Leu Leu Ser Thr His Arg Thr Leu Leu
35 40 45

Ile Ala Asn Glu Thr Leu Arg Ile Pro Val Pro Val His Lys Asn His
50 55 60

Gln Leu Cys Thr Glu Glu Ile Phe Gln Gly Ile Gly Thr Leu Glu Ser
65 70 75 80

Gln Thr Val Gln Gly Gly Thr Val Glu Arg Leu Phe Lys Asn Leu Ser
85 90 95

Leu Ile Lys Lys Tyr Ile Asp Gly Gln Lys Lys Lys Cys Gly Glu Glu
100 105 110

Arg Arg Arg Val Asn Gln Phe Leu Asp Tyr Leu Gln Glu Phe Leu Gly
115 120 125

Val Met Asn Thr Glu Trp Ile Ile Glu Ser
130 135

<210> 336
<211> 136
<212> PRT
<213> Artificial Sequence

<220>
<223> human C-IL-5-F construct

<400> 336

Ala Asp Pro Gly Cys Gly Gly Gly Gly Gly Leu Ala Ile Pro Thr Glu
1 5 10 15

Ile Pro Thr Ser Ala Leu Val Lys Glu Thr Leu Ala Leu Leu Ser Thr
20 25 30

His Arg Thr Leu Leu Ile Ala Asn Glu Thr Leu Arg Ile Pro Val Pro

```
        35                  40                  45

Val His Lys Asn His Gln Leu Cys Thr Glu Glu Ile Phe Gln Gly Ile
    50                  55                  60

Gly Thr Leu Glu Ser Gln Thr Val Gln Gly Gly Thr Val Glu Arg Leu
65                  70                  75                  80

Phe Lys Asn Leu Ser Leu Ile Lys Lys Tyr Ile Asp Gly Gln Lys Lys
                85                  90                  95

Lys Cys Gly Glu Glu Arg Arg Arg Val Asn Gln Phe Leu Asp Tyr Leu
            100                 105                 110

Gln Glu Phe Leu Gly Val Met Asn Thr Glu Trp Ile Ile Glu Ser Leu
        115                 120                 125

Glu Val Leu Ala Ile Glu Gly Arg
    130                 135
```

<210> 337
<211> 123
<212> PRT
<213> Artificial Sequence

<220>
<223> human C-IL-5-S construct

<400> 337

```
Leu Ala Cys Gly Gly Gly Gly Gly Ile Pro Thr Glu Ile Pro Thr Ser
1               5                   10                  15

Ala Leu Val Lys Glu Thr Leu Ala Leu Leu Ser Thr His Arg Thr Leu
            20                  25                  30

Leu Ile Ala Asn Glu Thr Leu Arg Ile Pro Val Pro Val His Lys Asn
        35                  40                  45

His Gln Leu Cys Thr Glu Glu Ile Phe Gln Gly Ile Gly Thr Leu Glu
    50                  55                  60

Ser Gln Thr Val Gln Gly Gly Thr Val Glu Arg Leu Phe Lys Asn Leu
65                  70                  75                  80

Ser Leu Ile Lys Lys Tyr Ile Asp Gly Gln Lys Lys Lys Cys Gly Glu
                85                  90                  95
```

Glu Arg Arg Arg Val Asn Gln Phe Leu Asp Tyr Leu Gln Glu Phe Leu
100 105 110

Gly Val Met Asn Thr Glu Trp Ile Ile Glu Ser
115 120

<210> 338
<211> 27
<212> PRT
<213> Artificial Sequence

<220>
<223> primer NheIL13-F

<400> 338

Cys Thr Ala Gly Cys Thr Ala Gly Cys Cys Gly Gly Gly Cys Cys Gly
1 5 10 15

Gly Thr Gly Cys Cys Ala Ala Gly Ala Thr Cys
20 25

<210> 339
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> primer XhoIL13-R

<400> 339
tttctcgagg aaggggccgt ggcgaa 26

<210> 340
<211> 55
<212> DNA
<213> Artificial Sequence

<220>
<223> primer Spelinker3-F1

<400> 340
ccccgccggg ttcttctggc ggtgctccgg ctagcatgga gattcccatg agcac 55

<210> 341
<211> 52
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer SpeNlinker3-F2

<400> 341
ttttactagt tggttgcggc ggcccgaaac cgagcacccc gccgggttct tc 52

<210> 342
<211> 49
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer IL5StopXho-R

<400> 342
ttttgcggcc gcgtttaaac tcgagttatt agccttccat tgcccactc 49

<210> 343
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer BamH1-FLK1-F

<400> 343
cgcggatcca ttcatcgcct ctgtc 25

<210> 344
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer Nhe1-FLK1-B

<400> 344
ctagctagct ttgtgtgaac tcggac 26

<210> 345
<211> 205
<212> PRT
<213> Artificial Sequence

<220>
<223> mVEGFR-2 (2-3) fragment

<400> 345

Pro Phe Ile Ala Ser Val Ser Asp Gln His Gly Ile Val Tyr Ile Thr
1 5 10 15

Glu Asn Lys Asn Lys Thr Val Val Ile Pro Cys Arg Gly Ser Ile Ser
20 25 30

Asn Leu Asn Val Ser Leu Cys Ala Arg Tyr Pro Glu Lys Arg Phe Val
35 40 45

Pro Asp Gly Asn Arg Ile Ser Trp Asp Ser Glu Ile Gly Phe Thr Leu
50 55 60

```
Pro Ser Tyr Met Ile Ser Tyr Ala Gly Met Val Phe Cys Glu Ala Lys
65                  70                  75                  80

Ile Asn Asp Glu Thr Tyr Gln Ser Ile Met Tyr Ile Val Val Val Val
                85                  90                  95

Gly Tyr Arg Ile Tyr Asp Val Ile Leu Ser Pro Pro His Glu Ile Glu
            100                 105                 110

Leu Ser Ala Gly Glu Lys Leu Val Leu Asn Cys Thr Ala Arg Thr Glu
        115                 120                 125

Leu Asn Val Gly Leu Asp Phe Thr Trp His Ser Pro Pro Ser Lys Ser
    130                 135                 140

His His Lys Lys Ile Val Asn Arg Asp Val Lys Pro Phe Pro Gly Thr
145                 150                 155                 160

Val Ala Lys Met Phe Leu Ser Thr Leu Thr Ile Glu Ser Val Thr Lys
                165                 170                 175

Ser Asp Gln Gly Glu Tyr Thr Cys Val Ala Ser Ser Gly Arg Met Ile
            180                 185                 190

Lys Arg Asn Arg Thr Phe Val Arg Val His Thr Lys Pro
        195                 200                 205
```

<210> 346
<211> 263
<212> PRT
<213> Artificial Sequence

<220>
<223> human C-LT_49-306 fragment

<400> 346

```
Leu Ala Cys Gly Gly Gln Asp Gln Gly Arg Arg Val Glu Lys Ile Ile
1               5                   10                  15

Gly Ser Gly Ala Gln Ala Gln Lys Arg Leu Asp Asp Ser Lys Pro Ser
            20                  25                  30

Cys Ile Leu Pro Ser Pro Ser Ser Leu Ser Glu Thr Pro Asp Pro Arg
        35                  40                  45

Leu His Pro Gln Arg Ser Asn Ala Ser Arg Asn Leu Ala Ser Thr Ser
```

```
    50                  55                  60

Gln Gly Pro Val Ala Gln Ser Ser Arg Glu Ala Ser Ala Trp Met Thr
65                  70                  75                  80

Ile Leu Ser Pro Ala Ala Asp Ser Thr Pro Asp Pro Gly Val Gln Gln
                85                  90                  95

Leu Pro Lys Gly Glu Pro Glu Thr Asp Leu Asn Pro Glu Leu Pro Ala
            100                 105                 110

Ala His Leu Ile Gly Ala Trp Met Ser Gly Gln Gly Leu Ser Trp Glu
        115                 120                 125

Ala Ser Gln Glu Glu Ala Phe Leu Arg Ser Gly Ala Gln Phe Ser Pro
    130                 135                 140

Thr His Gly Leu Ala Leu Pro Gln Asp Gly Val Tyr Tyr Leu Tyr Cys
145                 150                 155                 160

His Val Gly Tyr Arg Gly Arg Thr Pro Pro Ala Gly Arg Ser Arg Ala
                165                 170                 175

Arg Ser Leu Thr Leu Arg Ser Ala Leu Tyr Arg Ala Gly Gly Ala Tyr
            180                 185                 190

Gly Arg Gly Ser Pro Glu Leu Leu Leu Glu Gly Ala Glu Thr Val Thr
        195                 200                 205

Pro Val Val Asp Pro Ile Gly Tyr Gly Ser Leu Trp Tyr Thr Ser Val
    210                 215                 220

Gly Phe Gly Gly Leu Ala Gln Leu Arg Ser Gly Glu Arg Val Tyr Val
225                 230                 235                 240

Asn Ile Ser His Pro Asp Met Val Asp Tyr Arg Arg Gly Lys Thr Phe
                245                 250                 255

Phe Gly Ala Val Met Val Gly
            260
```

<210> 347
<211> 186
<212> PRT
<213> Artificial Sequence

<220>

<223> human C-LT_126-306 fragment

<400> 347

```
Leu Ala Cys Gly Gly Ser Pro Ala Ala Asp Ser Thr Pro Asp Pro Gly
1               5                   10                  15

Val Gln Gln Leu Pro Lys Gly Glu Pro Glu Thr Asp Leu Asn Pro Glu
            20                  25                  30

Leu Pro Ala Ala His Leu Ile Gly Ala Trp Met Ser Gly Gln Gly Leu
        35                  40                  45

Ser Trp Glu Ala Ser Gln Glu Glu Ala Phe Leu Arg Ser Gly Ala Gln
    50                  55                  60

Phe Ser Pro Thr His Gly Leu Ala Leu Pro Gln Asp Gly Val Tyr Tyr
65                  70                  75                  80

Leu Tyr Cys His Val Gly Tyr Arg Gly Arg Thr Pro Pro Ala Gly Arg
                85                  90                  95

Ser Arg Ala Arg Ser Leu Thr Leu Arg Ser Ala Leu Tyr Arg Ala Gly
            100                 105                 110

Gly Ala Tyr Gly Arg Gly Ser Pro Glu Leu Leu Leu Glu Gly Ala Glu
        115                 120                 125

Thr Val Thr Pro Val Val Asp Pro Ile Gly Tyr Gly Ser Leu Trp Tyr
    130                 135                 140

Thr Ser Val Gly Phe Gly Gly Leu Ala Gln Leu Arg Ser Gly Glu Arg
145                 150                 155                 160

Val Tyr Val Asn Ile Ser His Pro Asp Met Val Asp Tyr Arg Arg Gly
                165                 170                 175

Lys Thr Phe Phe Gly Ala Val Met Val Gly
            180                 185
```

<210> 348
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Modified human prion protein fragment

<400> 348

```
Val Gly Gly Leu Gly Gly Tyr Met Leu Gly Ser Ala Met Ser Arg Pro
1               5                  10                  15

Ile Ile His Phe Gly Ser Asp Tyr Glu Asp Arg Tyr Tyr Arg Glu Asn
            20                  25                  30

Met His Arg Tyr Pro Asn Gln Val Tyr Tyr Arg Pro Met Asp Glu Tyr
        35                  40                  45

Ser Asn Gln Asn Asn Phe Val His Asp Cys Val Asn Ile Thr Ile Lys
    50                  55                  60

Gln His Thr Val Thr Thr Thr Thr Lys Gly Glu Asn Phe Thr Glu Thr
65                  70                  75                  80

Asp Val Lys Met Met Glu Arg Val Val Glu Gln Met Cys Ile Thr Gln
                85                  90                  95

Tyr Glu Arg Glu Ser Gln Ala Tyr Tyr Gln Arg Gly Arg Leu Ala Gly
            100                 105                 110

Gly Gly Gly Cys Gly
        115
```

<210> 349
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Modified bovine prion protein fragment

<400> 349

```
Val Gly Gly Leu Gly Gly Tyr Met Leu Gly Ser Ala Met Ser Arg Pro
1               5                  10                  15

Leu Ile His Phe Gly Ser Asp Tyr Glu Asp Arg Tyr Tyr Arg Glu Asn
            20                  25                  30

Met His Arg Tyr Pro Asn Gln Val Tyr Tyr Arg Pro Val Asp Gln Tyr
        35                  40                  45

Ser Asn Gln Asn Asn Phe Val His Asp Cys Val Asn Ile Thr Val Lys
    50                  55                  60

Glu His Thr Val Thr Thr Thr Thr Lys Gly Glu Asn Phe Thr Glu Thr
65                  70                  75                  80
```

```
Asp Ile Lys Met Met Glu Arg Val Val Glu Gln Met Cys Ile Thr Gln
                85                  90                  95

Tyr Gln Arg Glu Ser Gln Ala Tyr Tyr Gln Arg Gly Arg Leu Ala Gly
            100                 105                 110

Gly Gly Gly Cys Gly
        115
```

<210> 350
<211> 117
<212> PRT
<213> Artificial Sequence

<220>
<223> Modified sheep prion protein fragment

<400> 350

```
Val Gly Gly Leu Gly Gly Tyr Met Leu Gly Ser Ala Met Ser Arg Pro
 1               5                  10                  15

Leu Ile His Phe Gly Asn Asp Tyr Glu Asp Arg Tyr Tyr Arg Glu Asn
            20                  25                  30

Met Tyr Arg Tyr Pro Asn Gln Val Tyr Tyr Arg Pro Val Asp Arg Tyr
        35                  40                  45

Ser Asn Gln Asn Asn Phe Val His Asp Cys Val Asn Ile Thr Val Lys
    50                  55                  60

Gln His Thr Val Thr Thr Thr Thr Lys Gly Glu Asn Phe Thr Glu Thr
65                  70                  75                  80

Asp Ile Lys Ile Met Glu Arg Val Val Glu Gln Met Cys Ile Thr Gln
                85                  90                  95

Tyr Gln Arg Glu Ser Gln Ala Tyr Tyr Gln Arg Gly Arg Leu Ala Gly
            100                 105                 110

Gly Gly Gly Cys Gly
        115
```

<210> 351
<211> 26
<212> PRT
<213> Homo sapiens

<220>
<223> VEGFR-II derived peptide

<400> 351

Cys Thr Ala Arg Thr Glu Leu Asn Val Gly Ile Asp Phe Asn Trp Glu
1 5 10 15

Tyr Pro Ser Ser Lys His Gln His Lys Lys
20 25

<210> 352
<211> 26
<212> PRT
<213> Artificial

<220>
<223> Murine VEGFR-II derived peptide

<400> 352

Cys Thr Ala Arg Thr Glu Leu Asn Val Gly Leu Asp Phe Thr Trp His
1 5 10 15

Ser Pro Pro Ser Lys Ser His His Lys Lys
20 25

<210> 353
<211> 14
<212> PRT
<213> Artificial

<220>
<223> Angiotensinogen

<400> 353

Asp Arg Val Tyr Ile His Pro Phe His Leu Val Ile His Asn
1 5 10

<210> 354
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Angiotensin I

<400> 354

Asp Arg Val Tyr Ile His Pro Phe His Leu
1 5 10

<210> 355

<211> 8
<212> PRT
<213> Artificial

<220>
<223> Angiotensin II

<400> 355

Asp Arg Val Tyr Ile His Pro Phe
1 5

<210> 356
<211> 26
<212> PRT
<213> Homo sapiens

<220>
<223> cprplong

<400> 356

Cys Ser Ala Met Ser Arg Pro Ile Ile His Phe Gly Ser Asp Tyr Glu
1 5 10 15

Asp Arg Tyr Tyr Arg Glu Asn Met His Arg
20 25

<210> 357
<211> 16
<212> PRT
<213> Homo sapiens

<220>
<223> cprpshort

<400> 357

Cys Gly Ser Asp Tyr Glu Asp Arg Tyr Tyr Arg Glu Asn Met His Arg
1 5 10 15

<210> 358
<211> 14
<212> PRT
<213> Artificial

<220>
<223> MuTNFa Peptide

<400> 358

Cys Gly Gly Val Glu Glu Gln Leu Glu Trp Leu Ser Gln Arg
1 5 10

<210> 359
<211> 22

<212> PRT
<213> Artificial

<220>
<223> 3'TNF II Peptide

<400> 359

Ser Ser Gln Asn Ser Ser Asp Lys Pro Val Ala His Val Val Ala Asn
1 5 10 15

His Gly Val Gly Gly Cys
20

<210> 360
<211> 20
<212> PRT
<213> Artificial

<220>
<223> 5'TNF II Peptide

<400> 360

Cys Ser Ser Gln Asn Ser Ser Asp Lys Pro Val Ala His Val Val Ala
1 5 10 15

Asn His Gly Val
20

<210> 361
<211> 22
<212> PRT
<213> Homo sapiens

<220>
<223> 4-22 epitope

<400> 361

Ser Ser Arg Thr Pro Ser Asp Lys Pro Val Ala His Val Val Ala Asn
1 5 10 15

Pro Gln Ala Glu Gly Gln
20

<210> 362
<211> 11
<212> PRT
<213> Homo sapiens

<220>
<223> amino acid residues 22-32

<400> 362

Gln Leu Gln Trp Leu Asn Arg Arg Ala Asn Ala
1 5 10

<210> 363
<211> 74
<212> DNA
<213> Artificial

<220>
<223> pET22b(+)

<400> 363
gtttaacttt aagaaggaga tatacatatg gatccggcta gcgctcgagg gtttaaacgg 60

cggccgcatg cacc 74

<210> 364
<211> 26
<212> PRT
<213> Artificial

<220>
<223> cprplong prion peptide

<400> 364

Cys Ser Ala Met Ser Arg Pro Met Ile His Phe Gly Asn Asp Trp Glu
1 5 10 15

Asp Arg Tyr Tyr Arg Glu Asn Met Tyr Arg
20 25

<210> 365
<211> 16
<212> PRT
<213> Artificial

<220>
<223> cprpshort prion peptide

<400> 365

Cys Gly Asn Asp Trp Glu Asp Arg Tyr Tyr Arg Glu Asn Met Tyr Arg
1 5 10 15

<210> 366
<211> 26
<212> PRT
<213> Artificial

<220>
<223> murine VEGFR-2 peptide

<400> 366

Cys Thr Ala Arg Thr Glu Leu Asn Val Gly Leu Asp Phe Thr Trp His
1 5 10 15

Ser Pro Pro Ser Lys Ser His His Lys Lys
20 25

<210> 367
<211> 18
<212> PRT
<213> Artificial

<220>
<223> ABeta 1-15

<400> 367

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Gly
1 5 10 15

Gly Cys

<210> 368
<211> 30
<212> PRT
<213> Artificial

<220>
<223> ABeta 1-27

<400> 368

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Gly Gly Cys
20 25 30

<210> 369
<211> 17
<212> PRT
<213> Artificial

<220>
<223> ABeta 33-42

<400> 369

Cys Gly His Gly Asn Lys Ser Gly Leu Met Val Gly Gly Val Val Ile
1 5 10 15

Ala

<210> 370
<211> 37

<212> DNA
<213> Artificial

<220>
<223> inverse primer

<400> 370
ggtaacatcg gtcgagatgg aaaacaaact ctggtcc 37

<210> 371
<211> 37
<212> DNA
<213> Artificial

<220>
<223> inverse primer

<400> 371
ggaccagagt ttgttttcca tctcgaccga tgttacc 37

<210> 372
<211> 22
<212> DNA
<213> Artificial

<220>
<223> upstream primer

<400> 372
agctcgcccg gggatcctct ag 22

<210> 373
<211> 40
<212> DNA
<213> Artificial

<220>
<223> downstream primer

<400> 373
cgatgcattt catccttagt tatcaatacg ctgggttcag 40

<210> 374
<211> 36
<212> DNA
<213> Artificial

<220>
<223> inverse primer

<400> 374
ggcaaaatta gagactgtta ctttaggtaa gatcgg 36

<210> 375
<211> 36
<212> DNA

<213> Artificial

<220>
<223> inverse primer

<400> 375
ccgatcttac ctaaagtaac agtctctaat tttgcc 36

<210> 376
<211> 33
<212> DNA
<213> Artificial

<220>
<223> Upstream primer

<400> 376
ggccatggca cgactcgaga ctgttacttt agg 33

<210> 377
<211> 19
<212> DNA
<213> Artificial

<220>
<223> Downstream primer

<400> 377
gatttaggtg acactatag 19

<210> 378
<211> 37
<212> DNA
<213> Artificial

<220>
<223> Inverse primer

<400> 378
gatggacgtc aaactctggt cctcaatccg cgtgggg 37

<210> 379
<211> 37
<212> DNA
<213> Artificial

<220>
<223> Inverse primer

<400> 379
ccccacgcgg attgaggacc agagtttgac gtccatc 37

<210> 380
<211> 11
<212> PRT
<213> Artificial

<220>
<223> Angio I

<400> 380

Cys Gly Gly Asp Arg Val Tyr Ile His Pro Phe
1 5 10

<210> 381
<211> 13
<212> PRT
<213> Artificial

<220>
<223> Angio II

<400> 381

Cys Gly Gly Asp Arg Val Tyr Ile His Pro Phe His Leu
1 5 10

<210> 382
<211> 13
<212> PRT
<213> Artificial

<220>
<223> Angio III

<400> 382

Asp Arg Val Tyr Ile His Pro Phe His Leu Gly Gly Cys
1 5 10

<210> 383
<211> 11
<212> PRT
<213> Artificial

<220>
<223> Angio IV

<400> 383

Cys Asp Arg Val Tyr Ile His Pro Phe His Leu
1 5 10

<210> 384
<211> 23
<212> PRT
<213> Artificial

<220>
<223> Der p I p52; aa 52-72

<400> 384

Cys Gly Asn Gln Ser Leu Asp Leu Ala Glu Gln Glu Leu Val Asp Cys
1 5 10 15

Ala Ser Gln His Gly Cys His
20

<210> 385
<211> 21
<212> PRT
<213> Artificial

<220>
<223> Der p 1 p117; aa 117-137

<400> 385

Cys Gln Ile Tyr Pro Pro Asn Ala Asn Lys Ile Arg Glu Ala Leu Ala
1 5 10 15

Gln Thr His Ser Ala
20

<210> 386
<211> 38
<212> DNA
<213> Artificial

<220>
<223> HBcAgwtHindIIII

<400> 386
cgcgtcccaa gcttctaaca ttgagattcc cgagattg 38

<210> 387
<211> 14
<212> PRT
<213> Artificial

<220>
<223> muTNFa peptide

<400> 387

Cys Gly Gly Val Glu Glu Gln Leu Glu Trp Leu Ser Gln Arg
1 5 10

<210> 388
<211> 54
<212> DNA
<213> Artificial

<220>
<223> Primer CA2F

<400> 388
cggctcgagc atcaccatca ccatcacggt gaagttaaac tgcagctgga gtcg 54

<210> 389
<211> 52
<212> DNA
<213> Artificial

<220>
<223> Primer CA1R

<400> 389
catgccatgg ttaaccacag gtgtgggttt tatcacaaga tttgggcaca ac 52

<210> 390
<211> 61
<212> DNA
<213> Artificial

<220>
<223> Primer CB1R

<400> 390
catgccatgg ttaaccacac ggcggagagg tgtgggtttt atcacaagat ttgggctcaa 60

c 61

<210> 391
<211> 58
<212> DNA
<213> Artificial

<220>
<223> Primer CC1R

<400> 391
ccagaagaac ccggcggggt agacggtttc gggctagcac aagatttggg ctcaactc 58

<210> 392
<211> 60
<212> DNA
<213> Artificial

<220>
<223> Primer CC1F

<400> 392
cgccgggttc ttctggtggt gctccgggtg gttgcggtta accatggaga aaataaagag 60

<210> 393
<211> 18
<212> DNA
<213> Artificial

<220>
<223> Primer CCR2

<400> 393
ctcccgggta gaagtcac 18

<210> 394
<211> 219
<212> PRT
<213> Artificial

<220>
<223> Light chains of pCA2, pCB2 and pCC2

<400> 394

Asp Ile Glu Leu Val Val Thr Gln Pro Ala Ser Val Ser Gly Ser Pro
1 5 10 15

Gly Gln Ser Ile Thr Ile Ser Cys Thr Gly Thr Arg Ser Asp Val Gly
20 25 30

Gly Tyr Asn Tyr Val Ser Trp Tyr Gln Gln His Pro Gly Lys Ala Pro
35 40 45

Lys Leu Met Ile Tyr Asp Val Ser Asn Arg Pro Ser Gly Val Ser Asn
50 55 60

Arg Phe Ser Gly Ser Lys Ser Gly Asn Thr Ala Ser Leu Thr Ile Ser
65 70 75 80

Gly Leu Gln Ala Glu Asp Glu Ala Asp Tyr Tyr Cys Ser Ser Tyr Thr
85 90 95

Ser Ser Ser Thr Leu Gly Val Phe Gly Gly Gly Thr Lys Leu Thr Val
100 105 110

Leu Gly Gln Pro Lys Ala Ala Pro Ser Val Thr Leu Phe Pro Pro Ser
115 120 125

Ser Glu Glu Leu Gln Ala Asn Lys Ala Thr Leu Val Cys Leu Ile Ser
130 135 140

Asp Phe Tyr Pro Gly Ala Val Thr Val Ala Trp Lys Ala Asp Ser Ser
145 150 155 160

Pro Val Lys Ala Gly Val Glu Thr Thr Thr Pro Ser Lys Gln Ser Asn
165 170 175

Asn Lys Tyr Ala Ala Ser Ser Tyr Leu Ser Leu Thr Pro Glu Gln Trp
180 185 190

```
Lys Ser His Lys Ser Tyr Ser Cys Gln Val Thr His Glu Gly Ser Thr
        195                 200                 205

Val Glu Lys Thr Val Ala Pro Thr Glu Cys Ser
    210                 215

<210>  395
<211>  251
<212>  PRT
<213>  Artificial

<220>
<223>  Heavy chain of pCA2

<400>  395

Glu Val Lys Leu Gln Leu Glu His His His His His His Gly Glu Val
1               5                   10                  15

Lys Leu Gln Leu Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu Thr
            20                  25                  30

Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Gly Gly
        35                  40                  45

Tyr Tyr Trp Thr Trp Ile Arg Gln Arg Pro Gly Lys Gly Leu Glu Trp
    50                  55                  60

Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Ser Tyr Asn Pro Ser Leu
65                  70                  75                  80

Lys Ser Arg Val Thr Met Ser Val Asp Thr Ser Lys Asn Gln Phe Ser
                85                  90                  95

Leu Arg Leu Thr Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys
            100                 105                 110

Ala Arg Glu Arg Gly Glu Thr Gly Leu Tyr Tyr Pro Tyr Tyr Tyr Ile
        115                 120                 125

Asp Val Trp Gly Thr Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr
    130                 135                 140

Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser
145                 150                 155                 160

Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu
```

```
                165                 170                 175

Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His
            180                 185                 190

Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser
        195                 200                 205

Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys
    210                 215                 220

Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu
225                 230                 235                 240

Pro Lys Ser Cys Asp Lys Thr His Thr Cys Gly
                245                 250
```

<210> 396
<211> 254
<212> PRT
<213> Artificial

<220>
<223> Heavy chain of pCB2

<400> 396

```
Glu Val Lys Leu Gln Leu Glu His His His His His His Gly Glu Val
1               5                   10                  15

Lys Leu Gln Leu Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu Thr
            20                  25                  30

Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Gly Gly
        35                  40                  45

Tyr Tyr Trp Thr Trp Ile Arg Gln Arg Pro Gly Lys Gly Leu Glu Trp
    50                  55                  60

Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Ser Tyr Asn Pro Ser Leu
65                  70                  75                  80

Lys Ser Arg Val Thr Met Ser Val Asp Thr Ser Lys Asn Gln Phe Ser
                85                  90                  95

Leu Arg Leu Thr Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys
            100                 105                 110
```

```
Ala Arg Glu Arg Gly Glu Thr Gly Leu Tyr Tyr Pro Tyr Tyr Tyr Ile
        115                 120                 125

Asp Val Trp Gly Thr Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr
    130                 135                 140

Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser
145                 150                 155                 160

Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu
                165                 170                 175

Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His
            180                 185                 190

Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser
        195                 200                 205

Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys
    210                 215                 220

Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu
225                 230                 235                 240

Pro Lys Ser Cys Asp Lys Thr His Thr Ser Pro Pro Cys Gly
                245                 250
```

<210> 397
<211> 263
<212> PRT
<213> Artificial

<220>
<223> Heavy chain of pCC2

<400> 397

```
Glu Val Lys Leu Gln Leu Glu His His His His His His Gly Glu Val
1               5                   10                  15

Lys Leu Gln Leu Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu Thr
            20                  25                  30

Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Gly Gly
        35                  40                  45

Tyr Tyr Trp Thr Trp Ile Arg Gln Arg Pro Gly Lys Gly Leu Glu Trp
    50                  55                  60
```

```
Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Ser Tyr Asn Pro Ser Leu
65                  70                  75                  80

Lys Ser Arg Val Thr Met Ser Val Asp Thr Ser Lys Asn Gln Phe Ser
                85                  90                  95

Leu Arg Leu Thr Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys
            100                 105                 110

Ala Arg Glu Arg Gly Glu Thr Gly Leu Tyr Tyr Pro Tyr Tyr Tyr Ile
        115                 120                 125

Asp Val Trp Gly Thr Gly Thr Thr Val Thr Val Ser Ser Ala Ser Thr
    130                 135                 140

Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Ser Ser Lys Ser Thr Ser
145                 150                 155                 160

Gly Gly Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu
                165                 170                 175

Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His
            180                 185                 190

Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser
        195                 200                 205

Val Val Thr Val Pro Ser Ser Ser Leu Gly Thr Gln Thr Tyr Ile Cys
    210                 215                 220

Asn Val Asn His Lys Pro Ser Asn Thr Lys Val Asp Lys Arg Val Glu
225                 230                 235                 240

Pro Lys Ser Cys Ala Ser Pro Lys Pro Ser Thr Pro Pro Gly Ser Ser
                245                 250                 255

Gly Gly Ala Pro Gly Gly Cys
            260
```

<210> 398
<211> 23
<212> PRT
<213> Artificial

<220>
<223> TNF-alpha attachment

<400> 398

Cys Ser Ser Arg Thr Pro Ser Asp Lys Pro Val Ala His Val Val Ala
1 5 10 15

Asn Pro Gln Ala Glu Gly Gln
20

<210> 399
<211> 25
<212> PRT
<213> Artificial

<220>
<223> TNF-alpha attachment

<400> 399

Ser Ser Arg Thr Pro Ser Asp Lys Pro Val Ala His Val Val Ala Asn
1 5 10 15

Pro Gln Ala Glu Gly Gln Gly Gly Cys
20 25

<210> 400
<211> 14
<212> PRT
<213> Artificial

<220>
<223> TNF-alpha attachment

<400> 400

Cys Gly Gly Gln Leu Gln Trp Leu Asn Arg Arg Ala Asn Ala
1 5 10

<210> 401
<211> 26
<212> PRT
<213> Bovine

<220>
<223> cprplong

<400> 401

Cys Ser Ala Met Ser Arg Pro Leu Ile His Phe Gly Asn Asp Tyr Glu
1 5 10 15

Asp Arg Tyr Tyr Arg Glu Asn Met His Arg
20 25

<210> 402

<211> 16
<212> PRT
<213> Bovine

<220>
<223> cprpshort

<400> 402

Cys Gly Asn Asp Tyr Glu Asp Arg Tyr Tyr Arg Glu Asn Met His Arg
1 5 10 15

<210> 403
<211> 26
<212> PRT
<213> Sheep

<220>
<223> cprplong

<400> 403

Cys Ser Ala Met Ser Arg Pro Leu Ile His Phe Gly Asn Asp Tyr Glu
1 5 10 15

Asp Arg Tyr Tyr Arg Glu Asn Met Tyr Arg
20 25

<210> 404
<211> 16
<212> PRT
<213> Sheep

<220>
<223> cprpshort

<400> 404

Cys Gly Asn Asp Tyr Glu Asp Arg Tyr Tyr Arg Glu Asn Met Tyr Arg
1 5 10 15

<210> 405
<211> 7
<212> PRT
<213> Artificial

<220>
<223> ABeta N-terminus fused

<400> 405

Cys Gly His Gly Asn Lys Ser
1 5

<210> 406
<211> 5
<212> PRT

<213> Artificial

<220>
<223> HBcAg1-183Lys construct

<400> 406

Gly Gly Lys Gly Gly
1 5

<210> 407
<211> 5
<212> PRT
<213> Artificial

<220>
<223> Glycine serine linkers

<400> 407

Gly Gly Gly Gly Ser
1 5

<210> 408
<211> 10
<212> PRT
<213> Artificial

<220>
<223> N-terminal gamma 1

<400> 408

Cys Gly Asp Lys Thr His Thr Ser Pro Pro
1 5 10

<210> 409
<211> 10
<212> PRT
<213> Artificial

<220>
<223> C-terminal gamma 1

<400> 409

Asp Lys Thr His Thr Ser Pro Pro Cys Gly
1 5 10

<210> 410
<211> 17
<212> PRT
<213> Artificial

<220>
<223> N-terminal gamma 3

<400> 410

Cys Gly Gly Pro Lys Pro Ser Thr Pro Pro Gly Ser Ser Gly Gly Ala
1 5 10 15

Pro

<210> 411
<211> 18
<212> PRT
<213> Artificial

<220>
<223> C-terminal gamma 3

<400> 411

Pro Lys Pro Ser Thr Pro Pro Gly Ser Ser Gly Gly Ala Pro Gly Gly
1 5 10 15

Cys Gly

<210> 412
<211> 6
<212> PRT
<213> Artificial

<220>
<223> N-terminal glycine linker

<400> 412

Gly Cys Gly Gly Gly Gly
1 5

<210> 413
<211> 6
<212> PRT
<213> Artificial

<220>
<223> C-terminal glycine linker

<400> 413

Gly Gly Gly Gly Cys Gly
1 5

<210> 414
<211> 4
<212> PRT
<213> Artificial

<220>
<223> C-terminal peptide linker

<400> 414

Gly Gly Cys Gly
1

<210> 415
<211> 5
<212> PRT
<213> Artificial

<220>
<223> Lymphotoxin-Beta linker

<400> 415

Leu Ala Cys Gly Gly
1 5

<210> 416
<211> 4
<212> PRT
<213> Artificial

<220>
<223> Amino acid linker

<400> 416

Ala Cys Gly Gly
1

<210> 417
<211> 8
<212> PRT
<213> Artificial

<220>
<223> N-terminal IL-13

<400> 417

Leu Ala Cys Gly Gly Gly Gly Gly
1 5

<210> 418
<211> 7
<212> PRT
<213> Artificial

<220>
<223> Amino acid linker

<400> 418

Ala Cys Gly Gly Gly Gly Gly
1 5

<210> 419
<211> 12
<212> PRT
<213> Artificial

<220>
<223> N-terminal IL-5

<400> 419

Ala Asp Pro Gly Cys Gly Gly Gly Gly Gly Leu Ala
1 5 10

<210> 420
<211> 7
<212> PRT
<213> Artificial

<220>
<223> Amino acid linker

<400> 420

Gly Cys Gly Gly Gly Gly Gly
1 5

<210> 421
<211> 31
<212> PRT
<213> Artificial

<220>
<223> Amidated ABeta 1-27

<220>
<221> MOD_RES
<222> (31)..(31)
<223> AMIDATION

<400> 421

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Lys
1 5 10 15

Leu Val Phe Phe Ala Glu Asp Val Gly Ser Asn Gly Gly Cys Xaa
20 25 30

<210> 422
<211> 17
<212> PRT
<213> Artificial

<220>
<223> Hydrogenated ABeta 33-42

<220>
<221> MOD_RES
<222> (1)..(1)
<223> Xaa=Hydrogen

<400> 422

Xaa Cys Gly His Gly Asn Lys Ser Gly Leu Met Val Gly Gly Val Val
1 5 10 15

Ile

<210> 423
<211> 19
<212> PRT
<213> Artificial

<220>
<223> Amidated ABeta 1-15

<220>
<221> MOD_RES
<222> (19)..(19)
<223> AMIDATION

<400> 423

Asp Ala Glu Phe Arg His Asp Ser Gly Tyr Glu Val His His Gln Gly
1 5 10 15

Gly Cys Xaa

<210> 424
<211> 9
<212> PRT
<213> Artificial

<220>
<223> Amino acid linker

<400> 424

Gly Cys Gly Ser Gly Gly Gly Gly Ser
1 5

<210> 425
<211> 10
<212> PRT
<213> Artificial

<220>
<223> Amino acid linker

<400> 425

Gly Ser Gly Gly Gly Gly Ser Gly Cys Gly
1 5 10

<210> 426
<211> 745
<212> DNA
<213> Artificial

<220>
<223> pCep-Xa-Fc* construct

<400> 426
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aagcttactc acacatgccc accgtgccca gcacctgaag ccgaggggc accgtcagtc 120

ttcctcttcc ccccaaaacc caaggacacc ctcatgatct cccggacccc tgaggtcaca 180

tgcgtggtgg tggacgtgag ccacgaagac cctgaggtca agttcaactg gtacgtggac 240

ggcgtggagg tgcataatgc caagacaaag ccgcgggagg agcagtacaa cagcacgtac 300

cgtgtggtca gcgtcctcac cgtcctgcac caggactggc tgaatggcaa ggagtacaag 360

tgcaaggtct ccaacaaagc cctcccagcc tccatcgaga aaaccatctc caaagccaaa 420

gggcagcccc gagaaccaca ggtgtacacc ctgcccccat cccgggatga gctgaccaag 480

aaccaggtca gcctgacctg cctggtcaaa ggcttctatc ccagcgacat cgccgtggag 540

tgggagagca atgggcagcc ggagaacaac tacaagacca cgcctcccgt gttggactcc 600

gacggctcct tcttcctcta cagcaagctc accgtggaca agagcaggtg gcagcagggg 660

aacgtcttct catgctccgt gatgcatgag gctctgcaca accactacac gcagaagagc 720

ctctccctgt ctccgggtaa atgac 745

<210> 427
<211> 96
<212> DNA
<213> Artificial

<220>
<223> pCep-EK-Fc* construct

<400> 427
gatccagcag ctgggctcga ggtgctagcg ggaggggtg gatgtgggga cgatgacgac 60

aagcttactc acacatgccc accgtgccca gcacct 96

<210> 428

<211> 144
<212> DNA
<213> Artificial

<220>
<223> pCep-SP-EK-Fc* construct

<400> 428
atggagacag acacactcct gctatgggta ctgctgctct gggttccagg ttccactggt 60

gacgcggatc cagcagctgg gctcgaggtg ctagcgggag ggggtggatg tggggacgat 120

gacgacaagc ttactcacac atgc 144

<210> 429
<211> 399
<212> DNA
<213> Mouse

<220>
<223> Resistin protein Res-C-Xa

<400> 429
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ctgctgggct ccagcatgcc actgtgtccc atcgatgaag ccatcgacaa gaagatcaaa 120

caagacttca actccctgtt tccaaatgca ataaagaaca ttggcttaaa ttgctggaca 180

gtctcctcca gagggaagtt ggcctcctgc ccagaaggca cagcagtctt gagctgctcc 240

tgtggctctg cctgtggctc gtgggacatt cgtgaagaaa aagtgtgtca ctgccagtgt 300

gcaaggatag actggacagc agcccgctgc tgtaagctgc aggtcgcttc ctctctagcg 360

ggaggggtg gatgtgggat cgaaggtcgc aagcttact 399

<210> 430
<211> 399
<212> DNA
<213> Mouse

<220>
<223> Resistin protein Res-C-EK

<400> 430
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ctgctgggct ccagcatgcc actgtgtccc atcgatgaag ccatcgacaa gaagatcaaa 120

caagacttca actccctgtt tccaaatgca ataaagaaca ttggcttaaa ttgctggaca 180

gtctcctcca gagggaagtt ggcctcctgc caagaaggca cagcagtctt gagctgctcc 240

tgtggctctg cctctggctc gtgggacatt cgtgaagaaa aagtgtgtca ctgccagtgt 300

gcaaggatag actggacagc agcccgctgc tgtaagctgc aggtcgcttc ctctctagcg 360

ggaggggtg gatgtgggga cgatgacgac aagcttact 399

<210> 431
<211> 4
<212> PRT
<213> Artificial

<220>
<223> ABeta N-terminus fused

<400> 431

Cys Gly Lys Arg
1